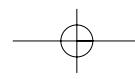
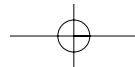


REFRIGERATOR MANUFACTURER
Turbo air

Headquarter: 1250 Victoria street
CARSON, CA 90746
& Canada Toll Free 800-627-0032
TEL: 310-900-1000
FAX: 310-900-1077
www.turboairinc.com
0210001

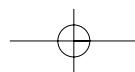


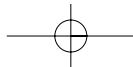


REFRIGERATOR MANUFACTURER
Turbo air

**Commercial
Refrigerator & Freezer
Service Manual**

**Model No.: TGM-69R
TGM-48R
TGM-45R
TGM-35R
TGM-33R
TGM-22R
TGM-22RV
TGM-14R
TGM-14RV
TGM-11R
TGM-11RV
TGM-5R
TGF-49F
TGF-23F
TGF-13F
TGF-9F**

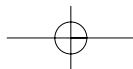




REFRIGERATOR MANUFACTURER
Turbo air

**Commercial
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TGF-23F
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TGF-9F**



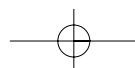


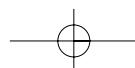
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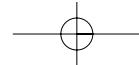
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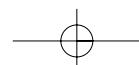
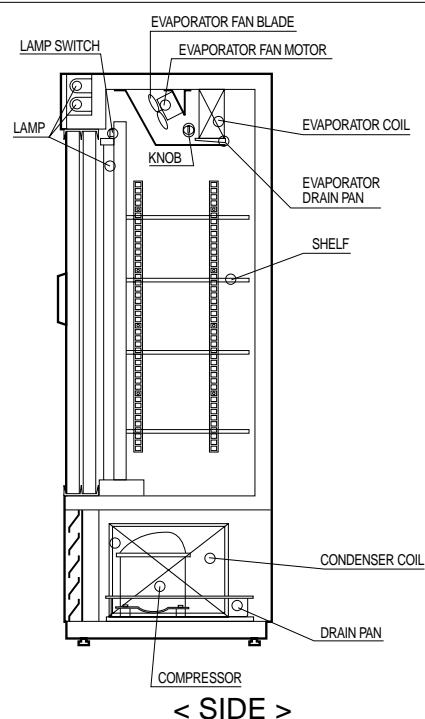
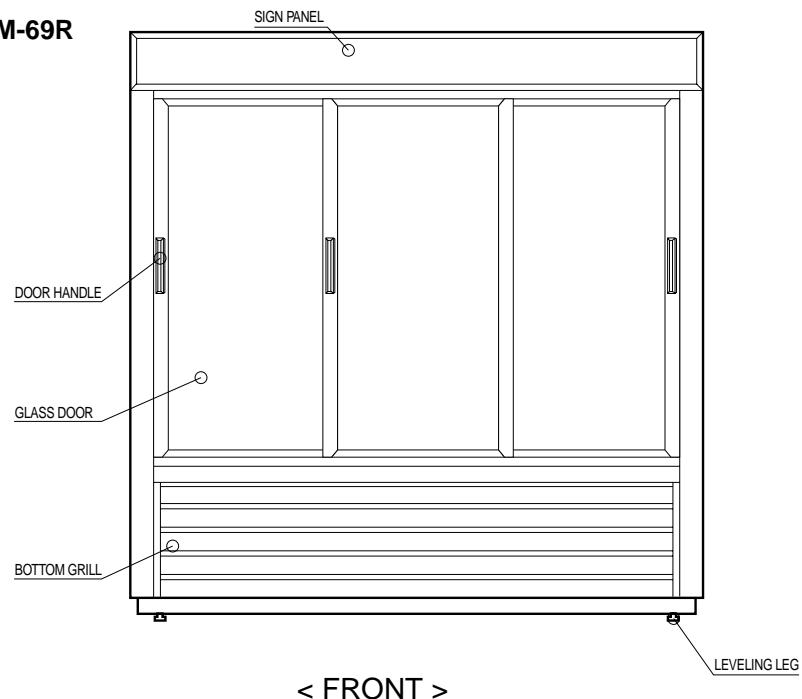
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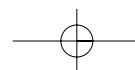
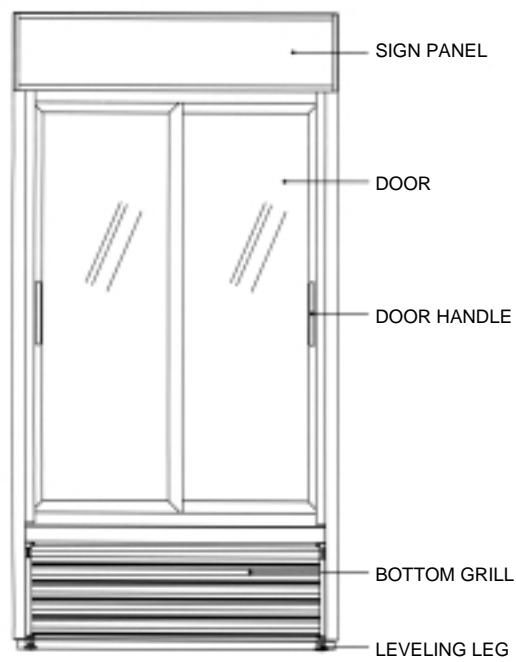




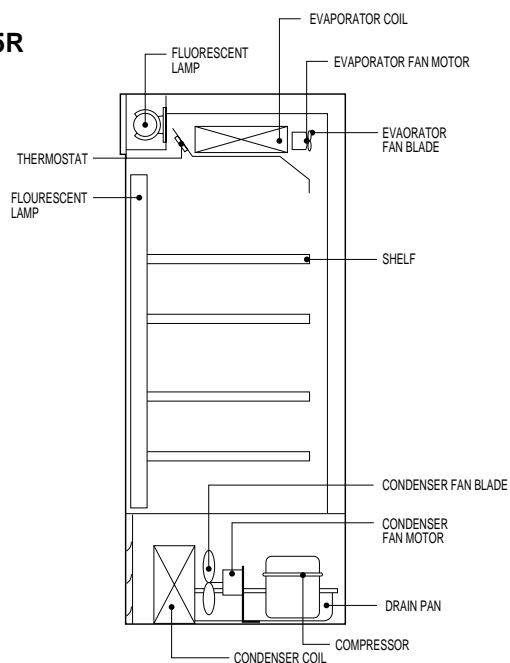
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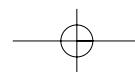


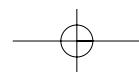
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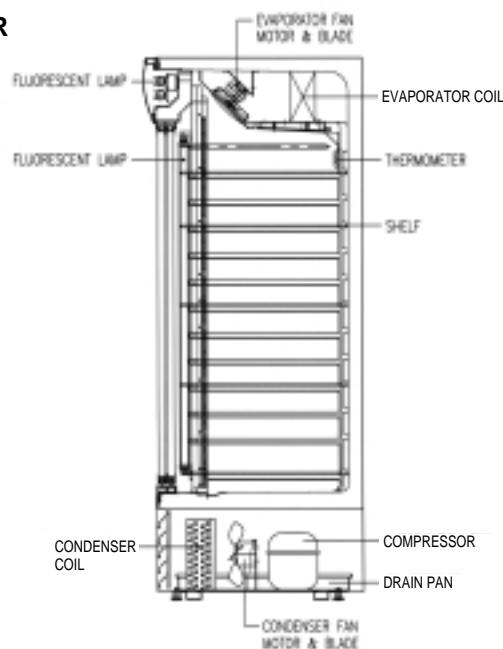
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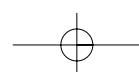


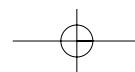
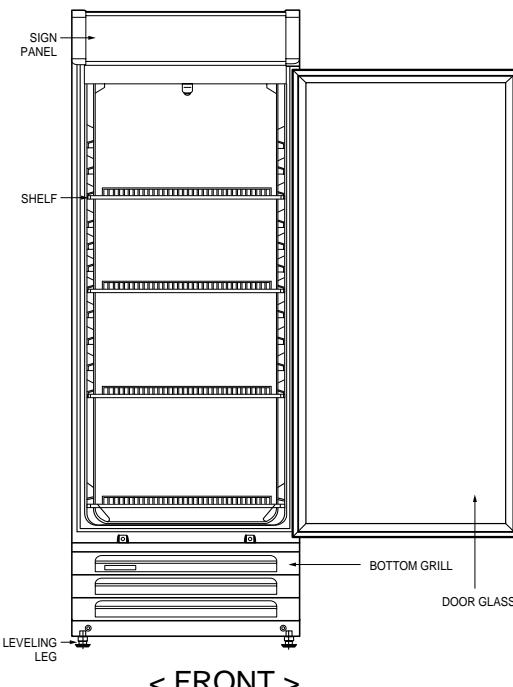
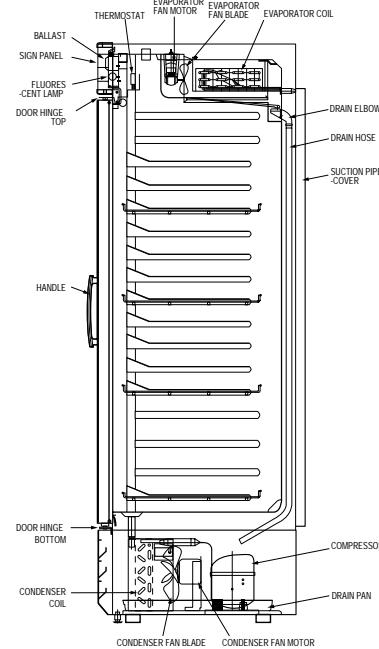
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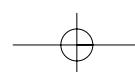


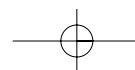
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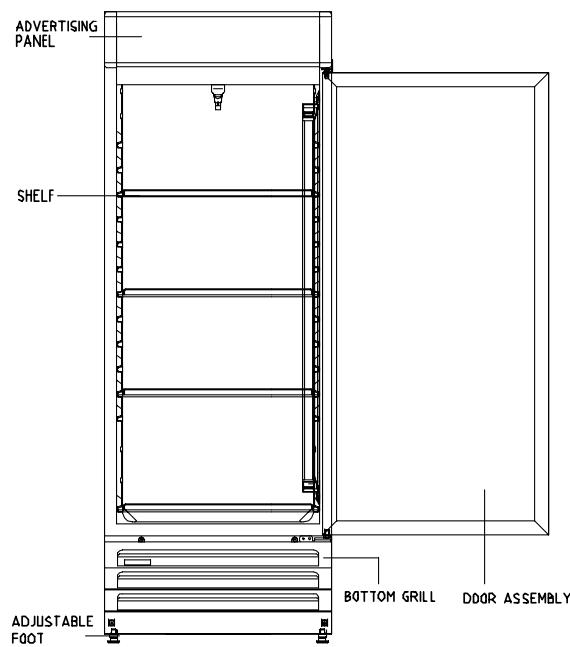
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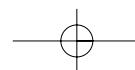
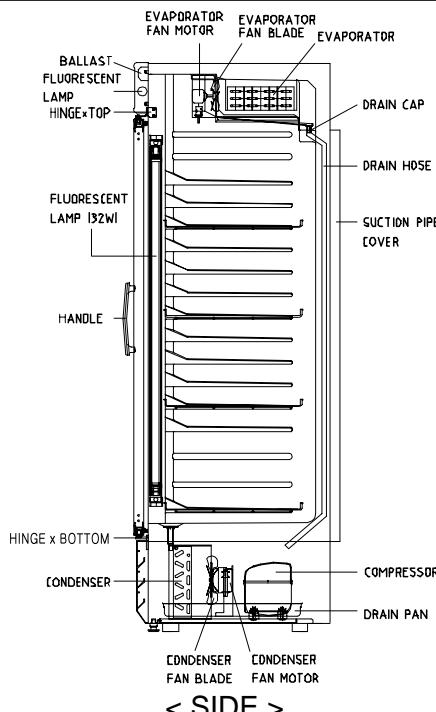


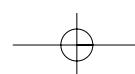
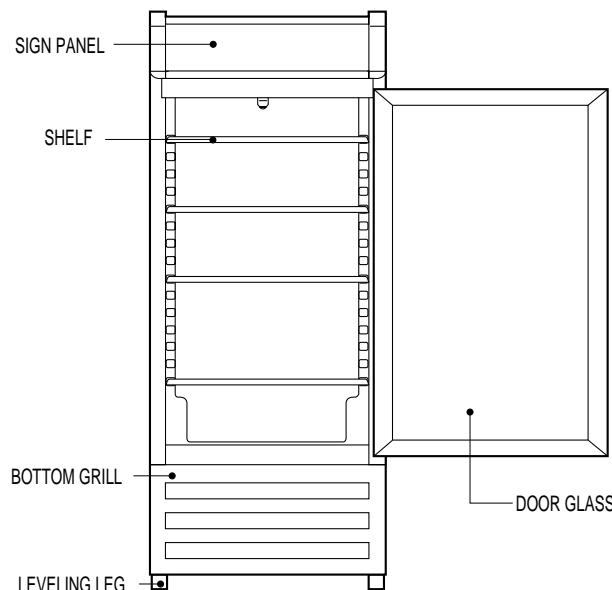
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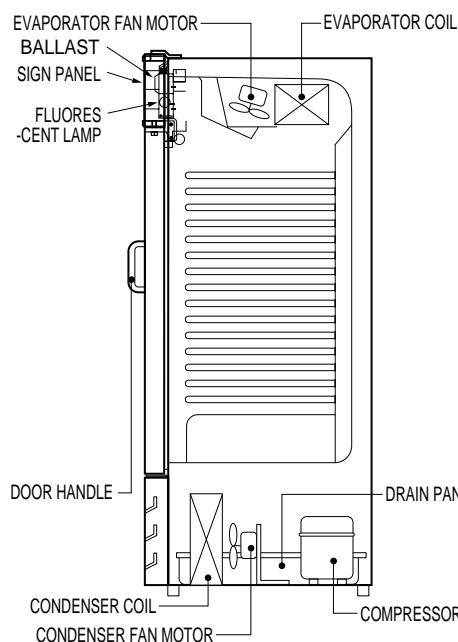


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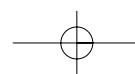


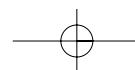
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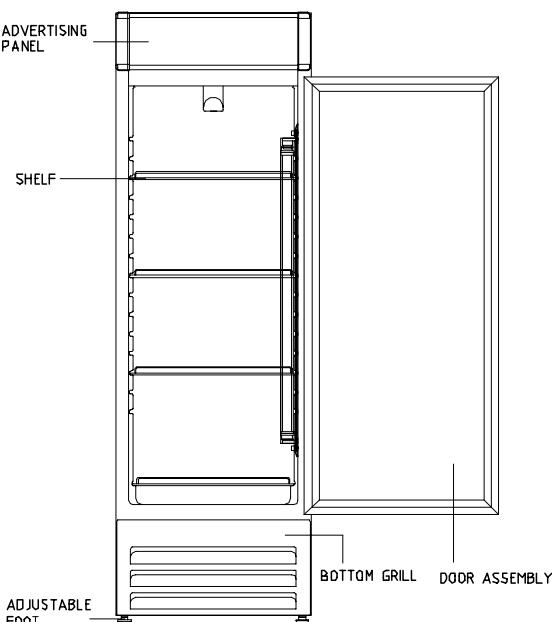
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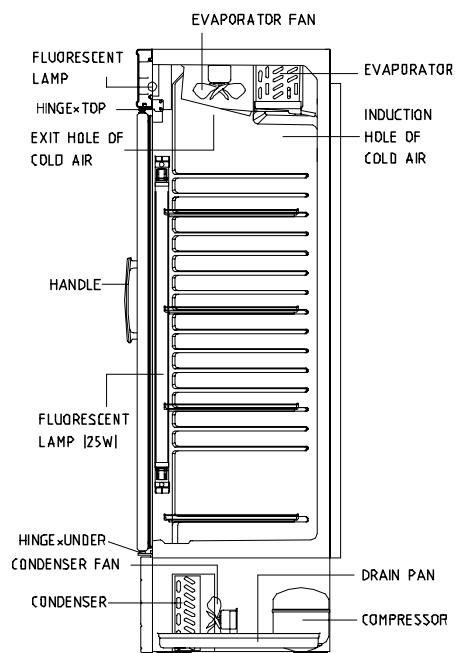
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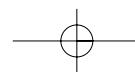


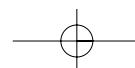
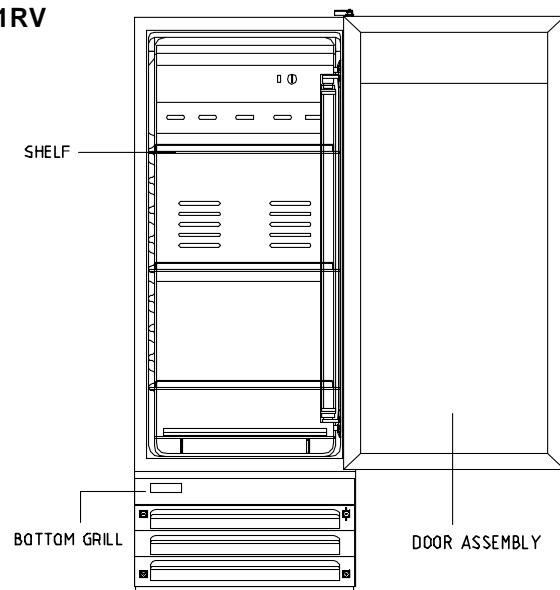
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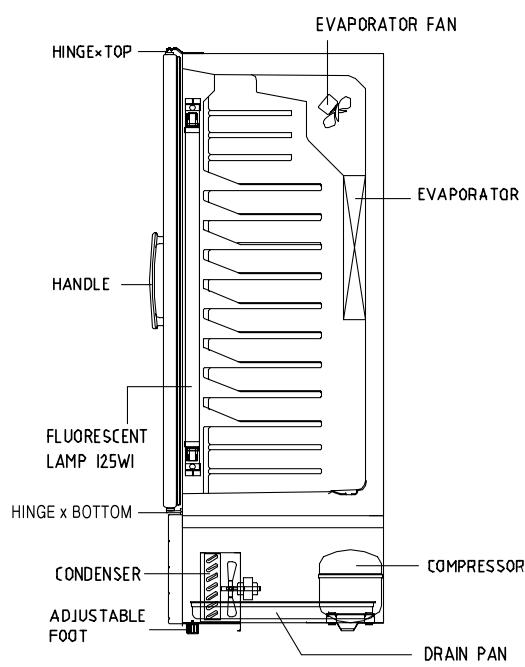


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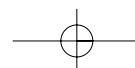


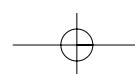
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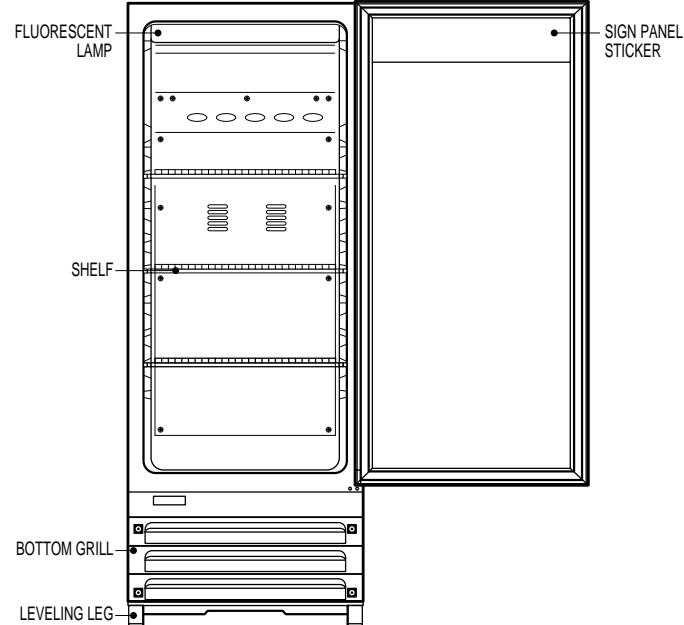
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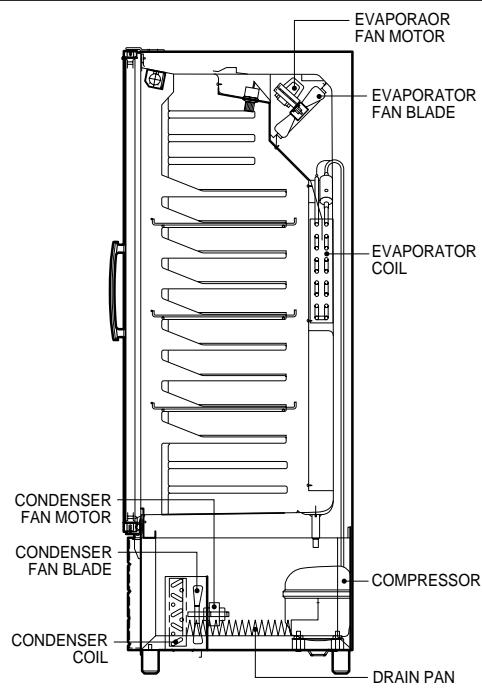
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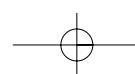


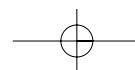
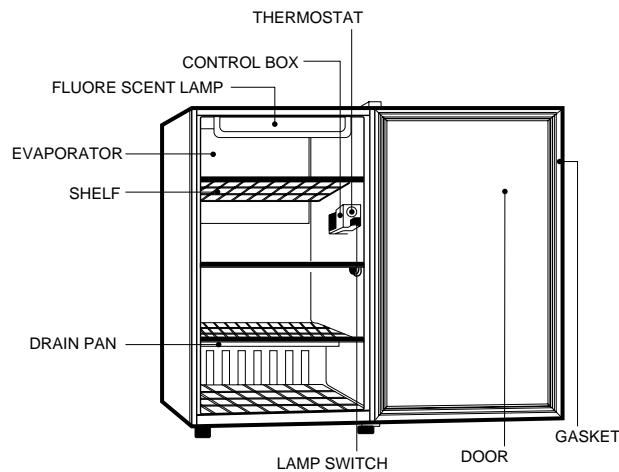
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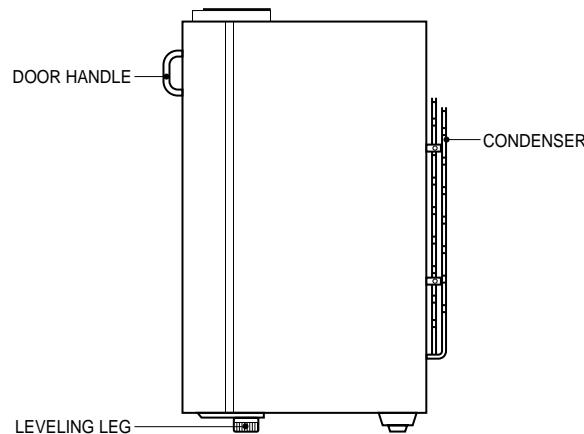


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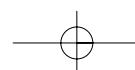


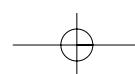
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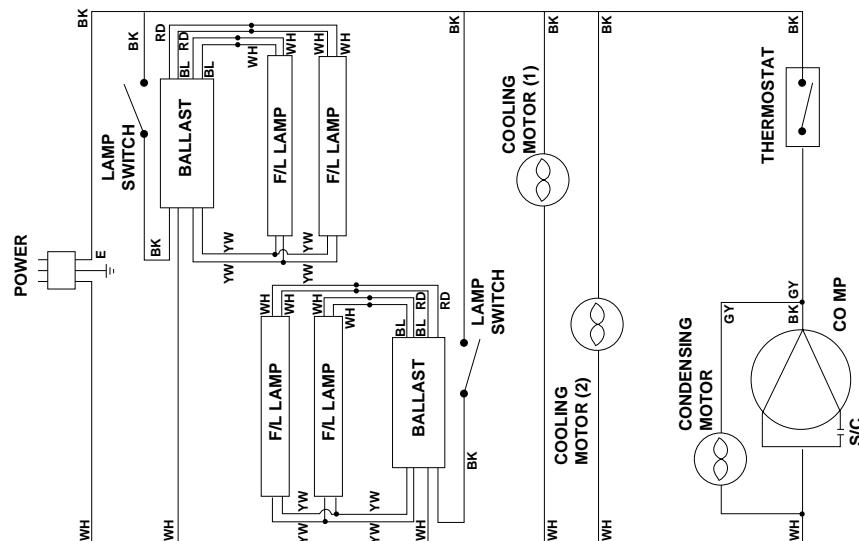
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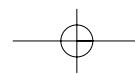
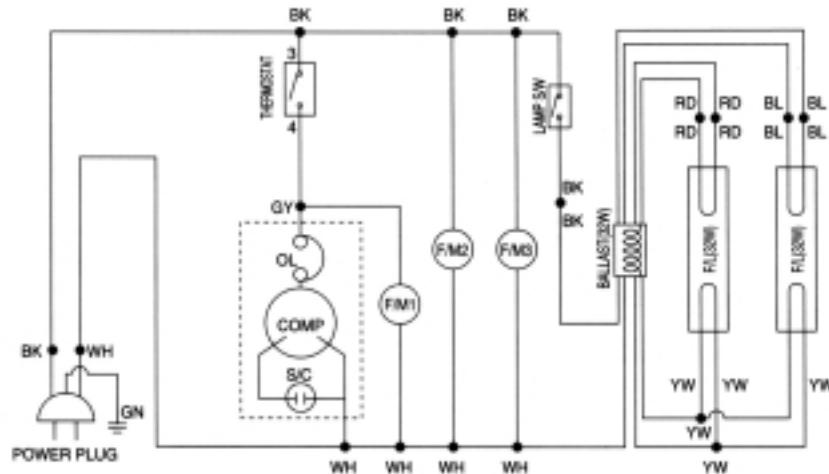


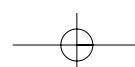
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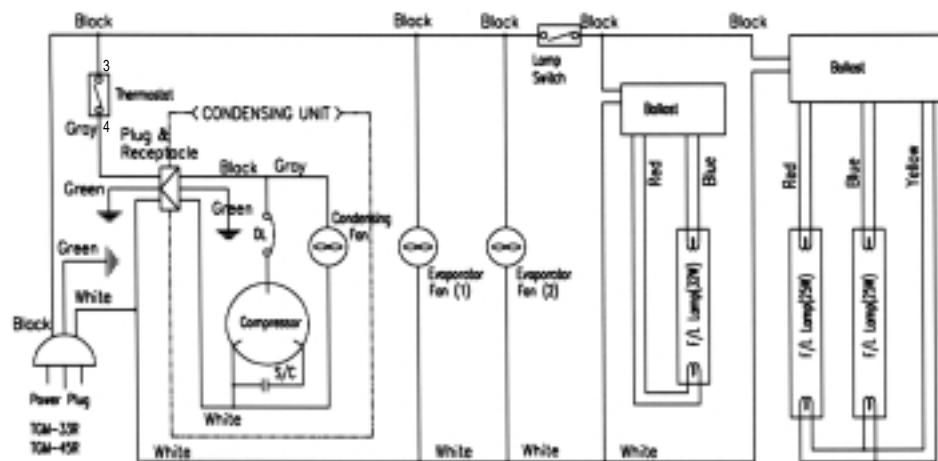
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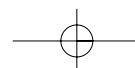
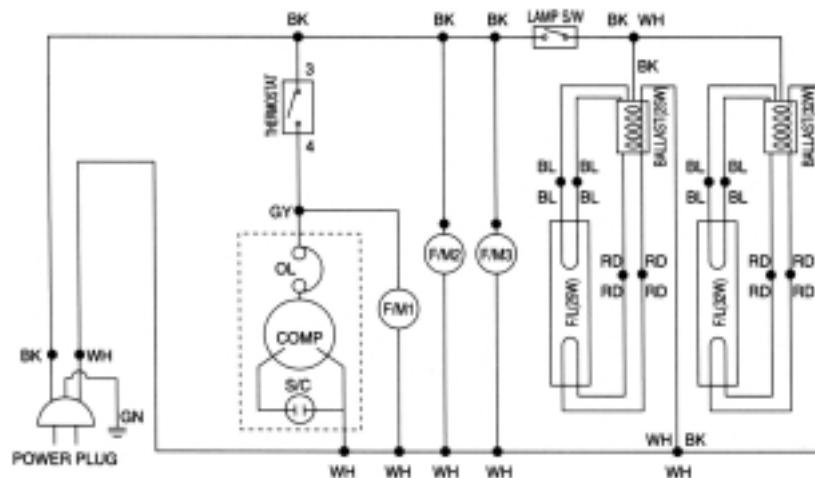


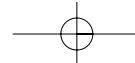
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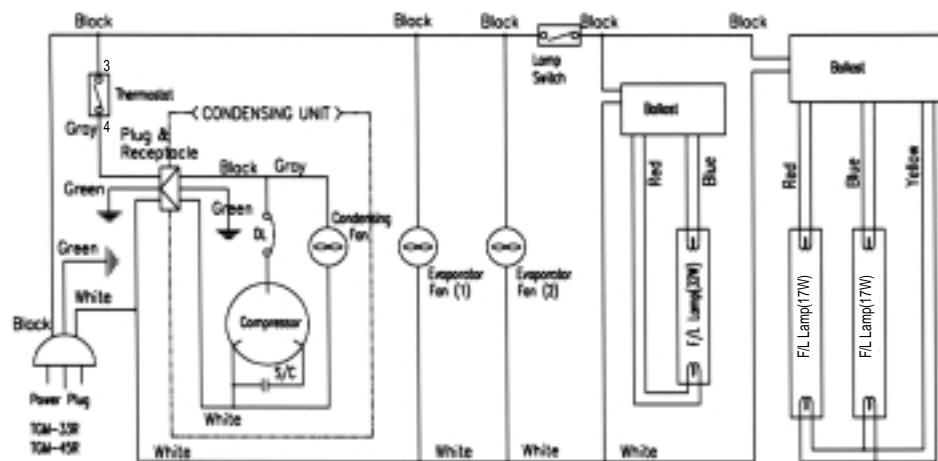
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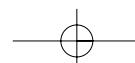
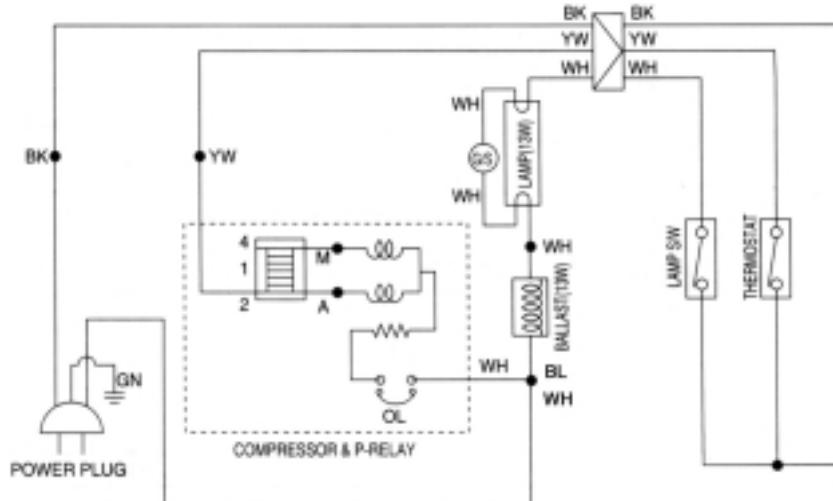


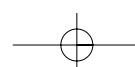
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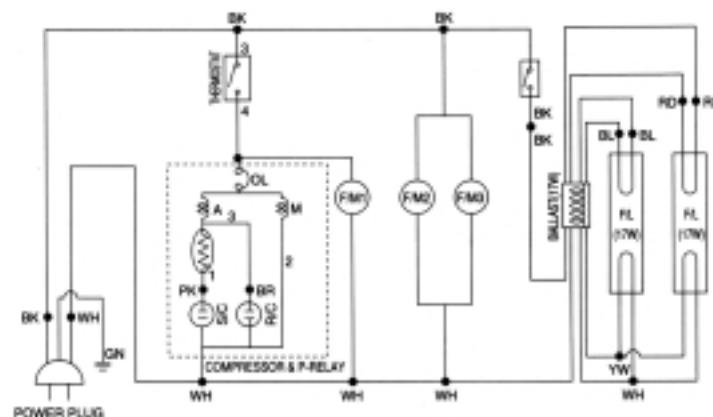
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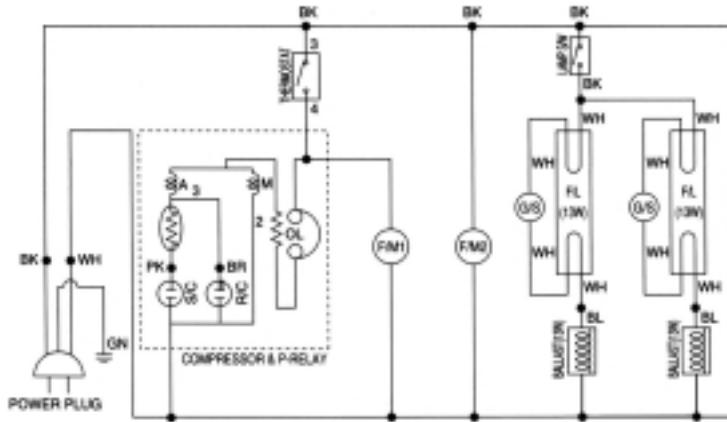


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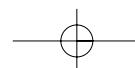
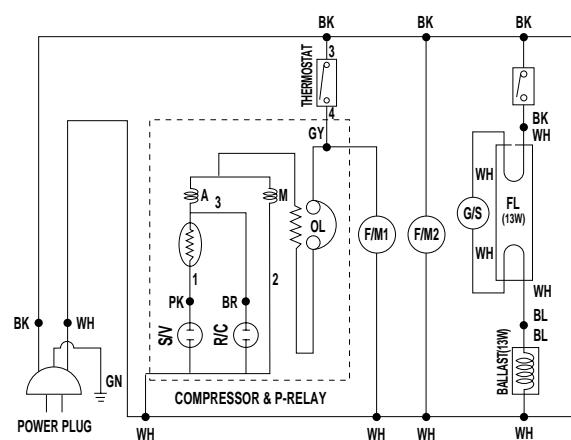
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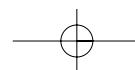


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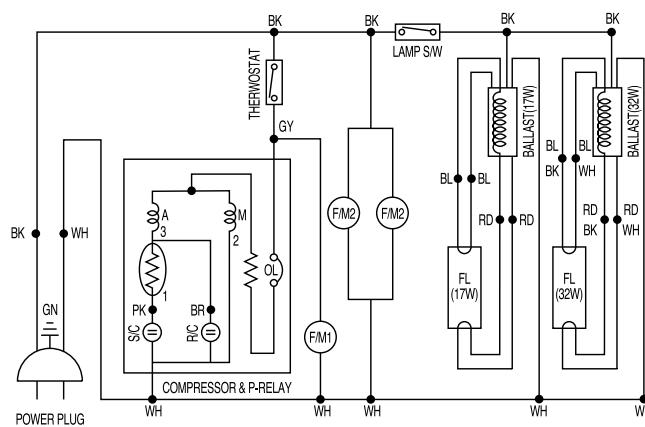
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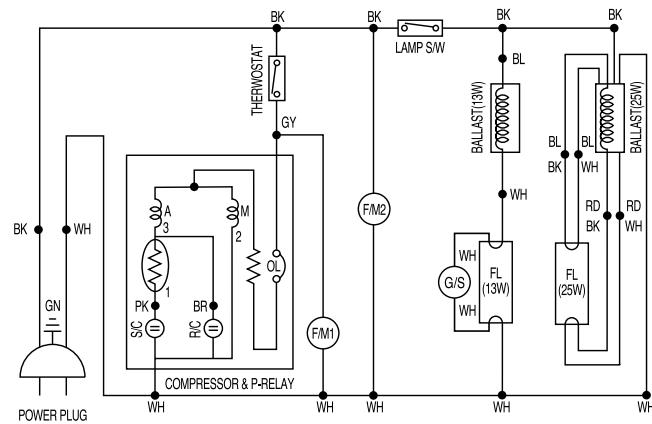


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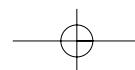
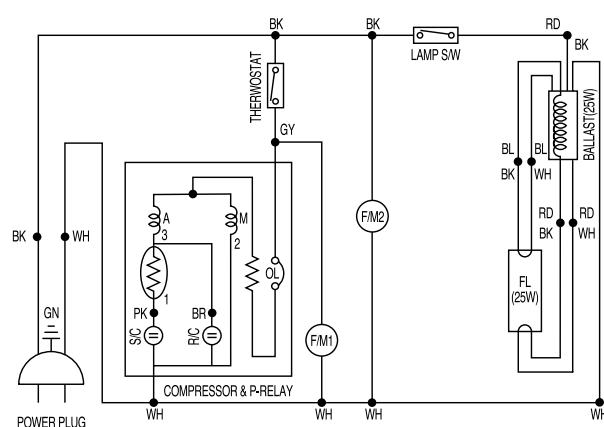
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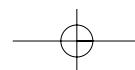


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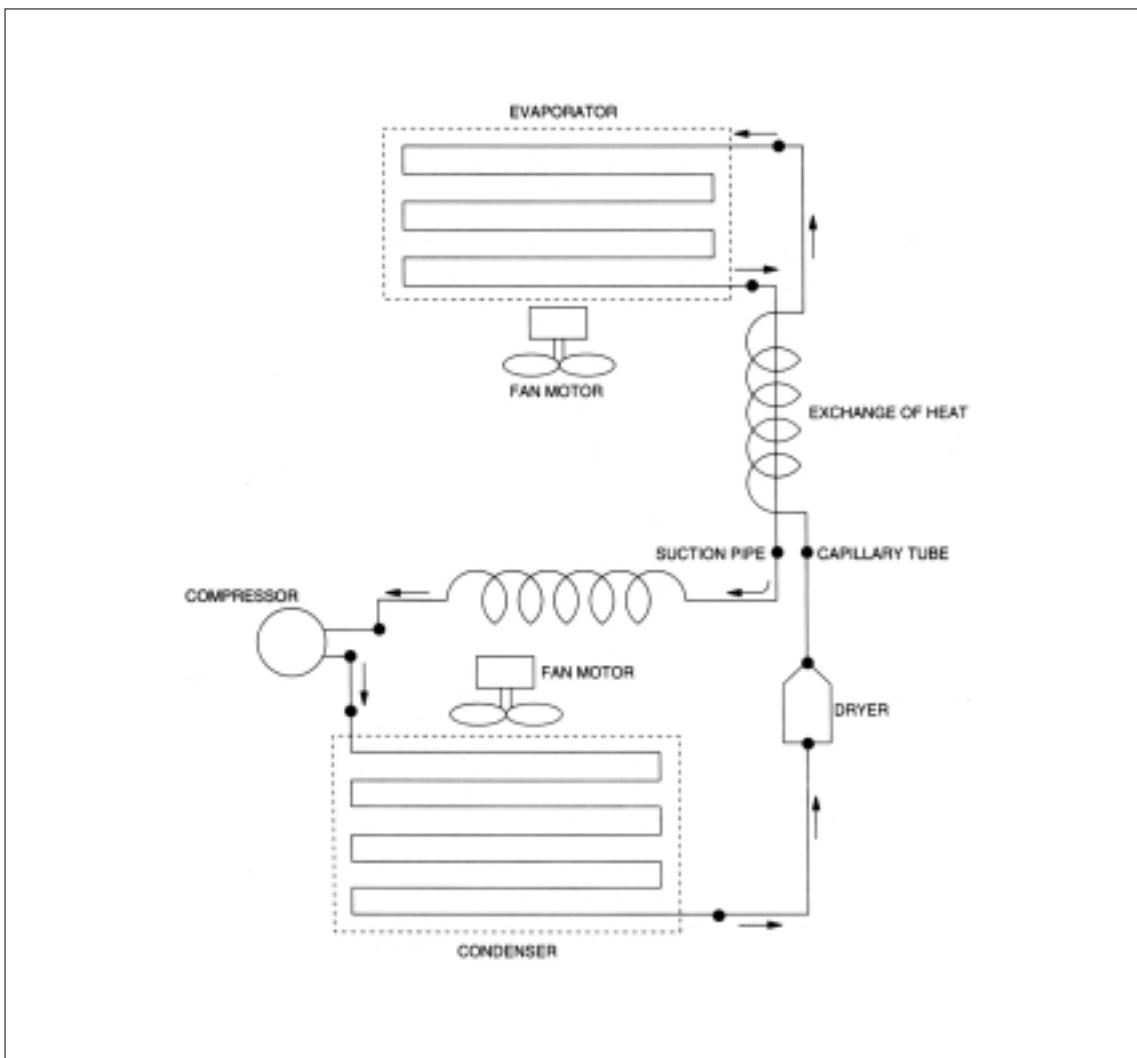


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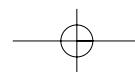


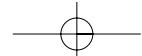


3. REFRIGERANT CYCLE DIAGRAM



- Refrigerant for all models: R-134a (CFC-Free)





4. SPECIFICATION OF MAIN COMPONENTS

1. COMPRESSOR

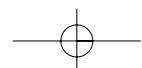
| MODEL | PART NAME | PART NO. | HORSE POWER | CAPACITY | TYPE OF MOTOR | INPUT | MAKER |
|------------------|------------|------------|-------------|-----------------------------|---------------|--------|----------|
| TGM69R | AKA4482YXA | 30200K2900 | 3/4 HP | 8,200 BTU/h | CSIR | 1,190W | TECUMSEH |
| TGM48R | | | | | | | |
| TGM45R | AKA4476YXA | 30200A4700 | 1/2 HP | 7,880 BTU/h (856 Kcal/h) | CSIR | 750W | TECUMSEH |
| TGM35R | | | | | | | |
| TGM33R | AEA4448YXA | 30200J2100 | 1/3 HP | 4,650 BTU/h | CSIR | 457W | TECUMSEH |
| TGM22R / TGM22RV | | | | | | | |
| TGM14R / TGM14RV | HBL27YE-1 | 3952127G10 | 1/3 HP | 2,080 BTU/h (226 Kcal/h) | CSR | 220W | DAEWOO |
| TGM11R / TGM11RV | | | | | | | |
| TGM5R | HFL11Y-1 | 3953111E10 | 1/10 HP | 874 BTU/h (95Kcal/h) | RSIR | 107W | DAEWOO |

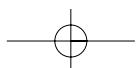
2. COMPRESSOR RELAY, OVERLOAD

| MODEL | PART NAME | PART NO. | MAKER | OVERLOAD | PART NO. | MAKER |
|------------------|------------|------------|----------|------------|------------|------------------|
| TGM69R | 820ARR2B19 | - | TECUMSEH | 8300MRAK30 | - | TECUMSEH |
| TGM48R | | | | | | |
| TGM45R | 82498-1 | - | TECUMSEH | 8300MRAM53 | - | TECUMSEH |
| TGM35R | | | | | | |
| TGM33R | 820RR12E72 | | TECUMSEH | 8300MRTM75 | | TECUMSEH |
| TGM22R / TGM22RV | | | | 4TM-783RHB | 3817908600 | |
| TGM14R / TGM14RV | PTC 068 | 3017906900 | DAEWOO | 4TM-783SHB | 3817910600 | TEXAS INSTRUMENT |
| TGM11R / TGM11RV | | | | 4TM-293THB | 3817906500 | |
| TGM5R | | | | | | |

3. COMPRESSOR CAPACITOR

| MODEL | PART NAME | PART NO. | MAKER | RUNNING | PART NO. | MAKER |
|------------------|--------------------|------------|----------|-----------|------------|----------|
| TGM69R | - | - | - | - | - | - |
| TGM48R | | | | | | |
| TGM45R | 125V 378~445MFD | - | TECUMSEH | - | - | TECUMSEH |
| TGM35R | | | | | | |
| TGM22R / TGM22RV | | | | | | |
| TGM14R / TGM14RV | 220V 100μF | 401RD35050 | DAEWOO | 230V 10μF | 400EL15130 | DAEWOO |
| TGM11R / TGM11RV | | | | | | |





SPECIFICATION OF MAIN COMPONENTS

4. CONDENSER FAN MOTOR

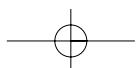
| MODEL | PART NAME | PART NO. | POLE | INPUT | TYPE | BLADE (NUMBER) | MAKER |
|-------------------|---------------|------------|------|-------|-----------------------|----------------|----------|
| TGM69R | IS-4420DWSG-1 | 3963220410 | 4P | 47W | Shaded Pole Induction | Aluminum (5) | SUNGSHIN |
| TGM48R | | | | | | | |
| TGM45R | | | | | | | |
| TGM35R | | | | | | | |
| TGM33R | | | | | | | |
| TGM22R / TGM22RV | IS-4420DWSR-1 | 3963229000 | 4P | 47W | Shaded Pole Induction | Aluminum (5) | SUNGSHIN |
| TGM14R / TGM14RV | IS-3225DWSQ-2 | 3963326710 | 2P | 36W | Shaded Pole Induction | Zytel (6) | SUNGSHIN |
| TGM11R / TGM-11RV | | | | | | | |

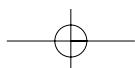
5. EVAPORATOR FAN MOTOR

| MODEL | PART NAME | PART NO. | POLE | INPUT | TYPE | BLADE (NUMBER) | MAKER |
|-------------------|----------------|------------|------|-------|-----------------------|----------------|----------|
| TGM69R | IS-4420DWSN-2A | 396328120 | 4P | 43W | Shaded Pole Induction | Aluminum (5) | SUNGSHIN |
| TGM48R | IS-3220DWSF | 3963220501 | 2P | 18W | Shaded Pole Induction | Zytel (3) | SUNGSHIN |
| TGM45R | IS-3225DWSL-1 | 3963329510 | 2P | 18W | Shaded Pole Induction | Zytel (6) | SUNGSHIN |
| TGM35R | IS-3220DWSF | 3963220501 | 2P | 18W | Shaded Pole Induction | Zytel (3) | SUNGSHIN |
| TGM33R | IS-3225DWSL-1 | 3963329510 | 2P | 18W | Shaded Pole Induction | Zytel (6) | SUNGSHIN |
| TGM22R TGM22RV | IS-3210DWSB-2 | 3963328610 | 2P | 16W | Shaded Pole Induction | ABS (4) | SUNGSHIN |
| TGM14R TGM14RV | IS-4420DWSN-2 | 3963328110 | 4P | 43W | Shaded Pole Induction | Aluminum (5) | SUNGSHIN |
| TGM11R TGM11RV | IS-3210DWSB-3 | 3963328620 | 2P | 16W | Shaded Pole Induction | ABS (4) | SUNGSHIN |

6. THERMOSTAT

| MODEL | PART NAME | PART NO. | TYPE | MAKER |
|------------------|-----------|------------|--------|---------|
| TGM69R | K55-Q5606 | 30283K0110 | C.C.I | RANCO |
| TGM48R | K55-Q5605 | 30283K0100 | C.C.I | RANCO |
| TGM45R | K55-Q5602 | 30283D0700 | C.C.I | RANCO |
| TGM35R | | | | |
| TGM33R | | | | |
| TGM22R / TGM22RV | K61-Q5603 | 30283D0800 | C.C.I | RANCO |
| TGM14R / TGM14RV | | | | |
| TGM11R / TGM11RV | TGM5R | 3018301001 | NORMAL | PACIFIC |
| | | | NORMAL | SHINHAN |





SPECIFICATION OF MAIN COMPONENTS

7. BALLAST

| MODEL | PART NAME | | PART NO. | QTY | WATT | CURRENT | TYPE |
|---------|------------------------|-------------|------------|-----|------|---------|-----------|
| | ADVANCE | MAGNETEK | | | | | |
| TGM69R | R-2P32-TP | M232SR120C | 30285D0500 | 2 | 32W | 0.61A | Rapid |
| TGM48R | R-2P32-TP | M-232SR120C | 30285D0500 | 1 | 32W | 0.61A | Rapid |
| TGM45R | R-1P32-TP | M-132R120C | 30285A0700 | 1 | 32W | 0.32A | Rapid |
| | R-2P825-TP | 731-L-TC-P | 30285J1200 | 1 | 25W | 0.30A | Rapid |
| TGM35R | R-1P32-TP | M-132R120C | 30285A0700 | 1 | 32W | 0.32A | Rapid |
| | R-1P825-TP | 727-L-TC-P | 30285J1200 | 1 | 25W | 0.30A | Rapid |
| TGM33R | R-1P32-TP | M-132R120C | 30285A0700 | 1 | 32W | 0.32A | Rapid |
| | R-2P817-TP | 701-L-TC-P | 30285H1500 | 1 | 17W | 0.39A | Rapid |
| TGM22R | R-2P817-TP | 701-L-TC-P | 30285H1500 | 1 | 17W | 0.39A | Rapid |
| TGM22RV | R-1P32-TP | M-132R120C | 30285A0700 | 1 | 32W | 0.32A | Rapid |
| | R-1P817-TP | 703-L-TC-P | 30200H7400 | 1 | 17W | 0.21A | Rapid |
| TGM14R | DD22B (MAKER : DONGDO) | | 30200A0140 | 2 | 13W | 0.28A | Preheated |
| TGM14RV | R-1P825-TP | 727-L-TC-P | 30285J1200 | 1 | 25W | 0.30A | Rapid |
| TGM11R | DD22B (MAKER : DONGDO) | | 30200A0140 | 1 | 13W | 0.28A | Preheated |
| TGM11RV | R-1P825-TP | 727-L-TC-P | 30285J1200 | 1 | 25W | 0.30A | Rapid |
| TGM5R | DD22B (MAKER : DONGDO) | | 30200A0140 | 1 | 13W | 0.28A | Preheated |

8. FLUORESCENT LAMP

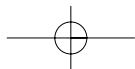
| MODEL | PART NAME | PART NO. | QTY | WATT | LENGTH | DESCRIPTION | BULB | MAKER |
|---------|-------------|------------|-----|------|--------|-------------------|------|---------------------|
| TGM69R | F32T8/TL850 | 30200D2800 | 4 | 32W | 48" | TL80, 5000K | T8 | PHILIPS or GE |
| TGM48R | F32T8/TL850 | 30200D2800 | 2 | 32W | 48" | TL80, 5000K | T8 | |
| TGM45R | F32T8/TL850 | 30200D2800 | 1 | 32W | 48" | TL80, 5000K | T8 | |
| | F25T8/TL950 | 30236A0500 | 2 | 25W | 36" | TL80, 5000K | T8 | |
| TGM35R | F32T8/TL850 | 30200D2800 | 1 | 32W | 48" | TL80, 5000K | T8 | |
| | F25T8/TL950 | 30236A0500 | 1 | 25W | 36" | TL80, 5000K | T8 | |
| TGM33R | F32T8/TL850 | 30200D2800 | 1 | 32W | 48" | TL80, 5000K | T8 | |
| | F17T8/TL950 | 30236H0500 | 2 | 25W | 36" | TL80, 5000K | T8 | |
| TGM22R | F17T8/TL950 | 30236H0500 | 2 | 17W | 24" | TL80, 5000K | T8 | |
| TGM22RV | F32T8/TL850 | 30200D2800 | 1 | 32W | 48" | TL80, 5000K | T8 | |
| | F17T8/TL950 | 30236H0500 | 1 | 17W | 24" | TL80, 5000K | T8 | |
| TGM14R | F13T8/CW | 30236F0500 | 2 | 13W | 12" | COOL WHITE, 4100K | T8 | |
| TGM14RV | F28T8/TL950 | 30236A0500 | 1 | 25W | 36" | TL80, 5000K | T8 | |
| | F13T8/CW | 30236F0500 | 1 | 13W | 12" | COOL WHITH, 4100K | T8 | |
| TGM11R | F13T8/CW | 30236F0500 | 1 | 13W | 12" | COOL WHITE, 4100K | T8 | |
| TGM11RV | F28T8/TL950 | 30236A0500 | 1 | 25W | 36" | TL80, 5000K | T8 | |
| TGM5R | F13T8/CW | 30236F0500 | 1 | 13W | 12" | COOL WHITE, 4100K | T8 | |

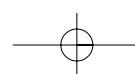
9. LIGHT STATER

| MODEL | PART NAME | PART NO. | BASE | MAKER |
|------------------|-----------|------------|------|-------|
| TGM14R / TGM14RV | | | | |
| TGM11R | FS-2 | 30236A0700 | P21 | OPO |
| TGM5R | | | | |

10. LAMP SWITCH

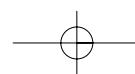
| MODEL | TYPE | PART NO. | RATING | MAKER |
|-------|---------------|------------|----------|---------|
| ALL | ROCKER SWITCH | 30281A0600 | 125V, 6A | DAESUNG |

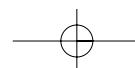




5. TROUBLE SHOOTING CHART

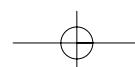
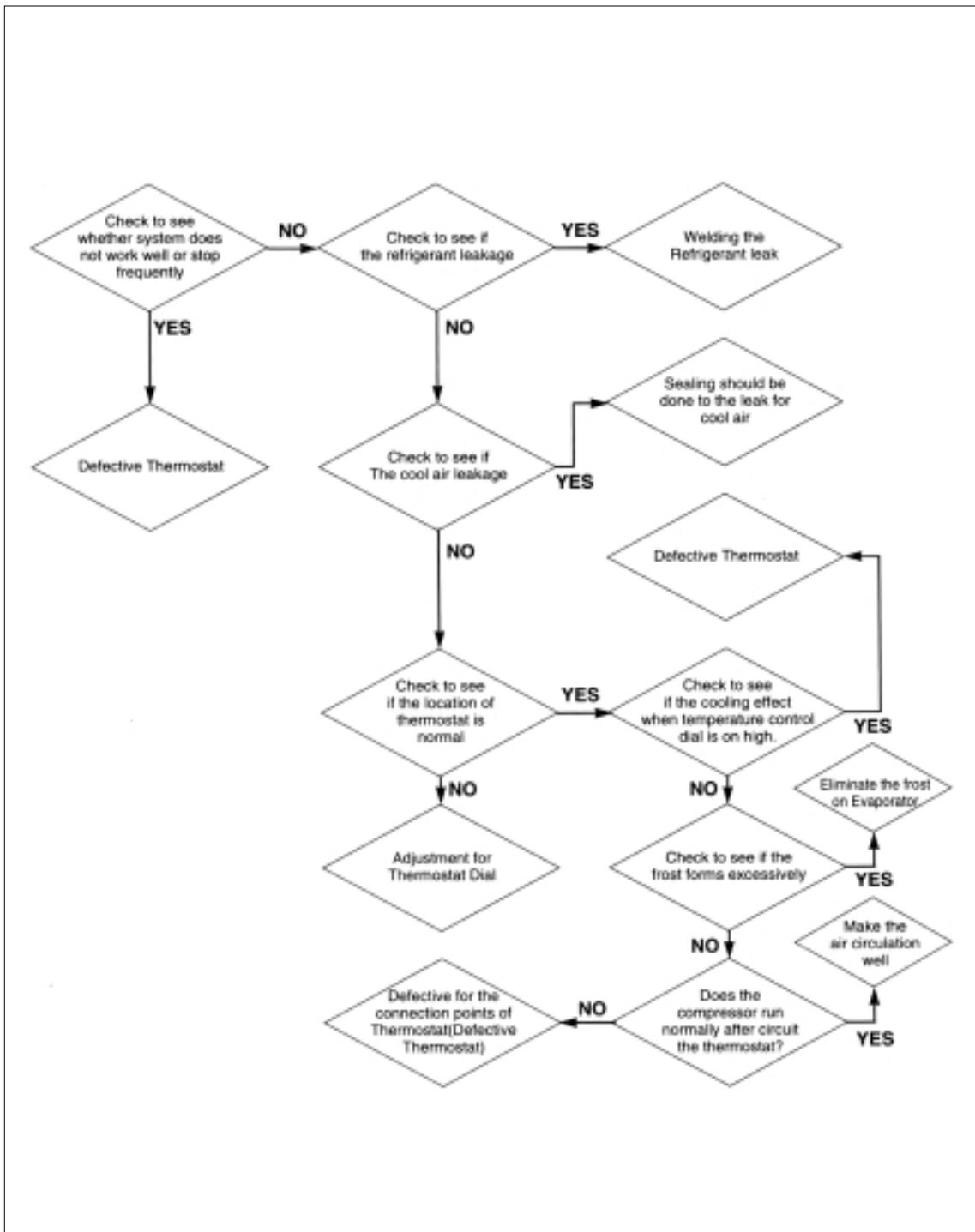
1. THE REFRIGERATOR DOES NOT COOLING

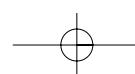




TROUBLE SHOOTING CHART

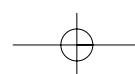
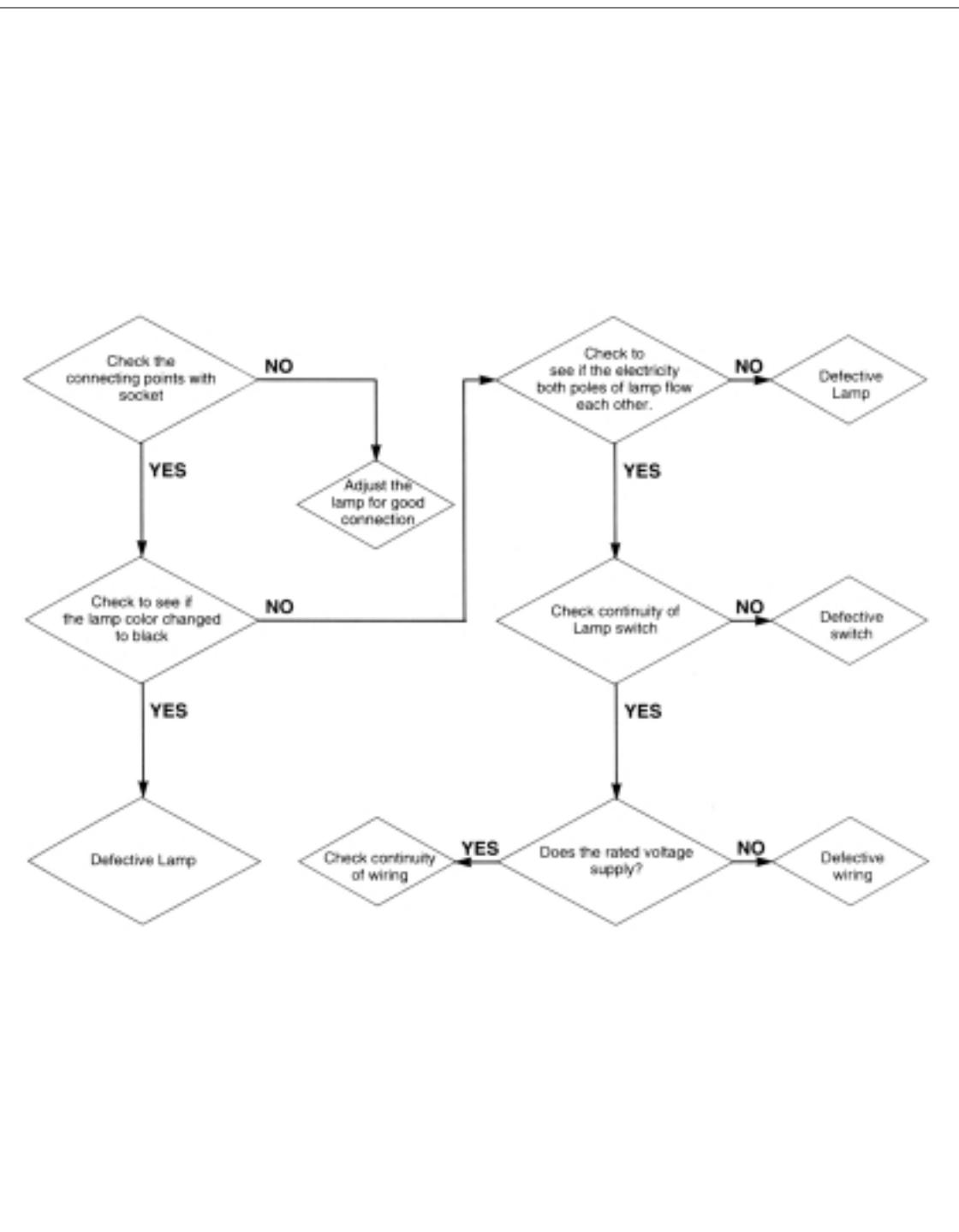
2. THE REFRIGERATOR DOES NOT COOLING WELL

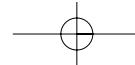




TROUBLE SHOOTING CHART

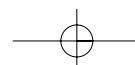
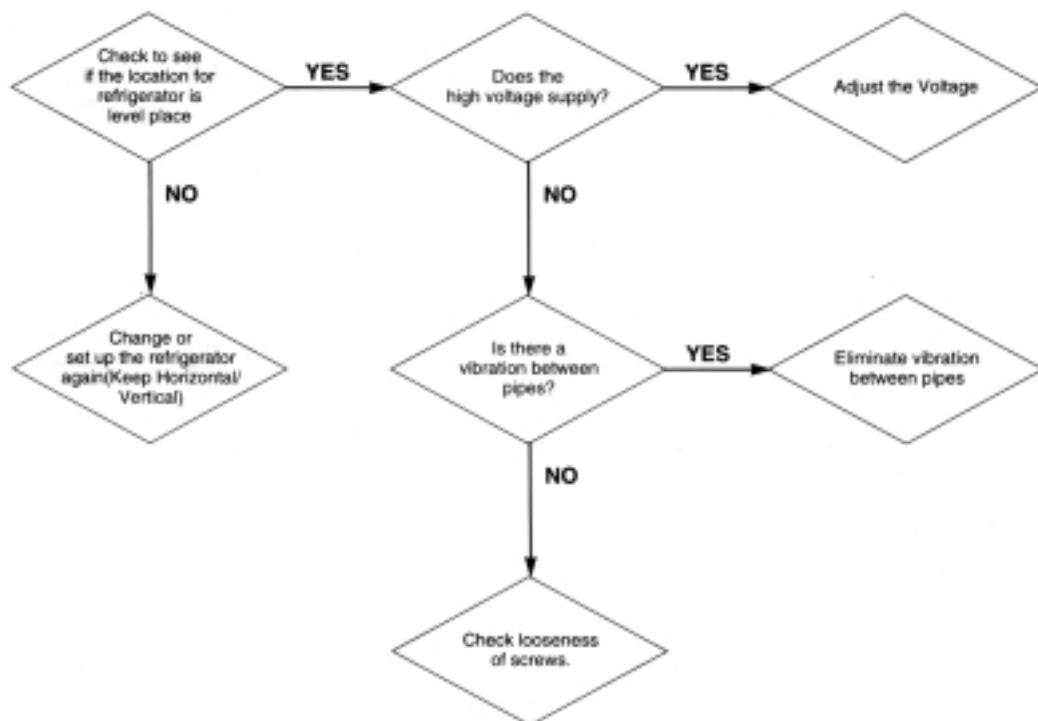
3. LAMP DOES NOT LIGHT WELL

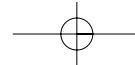




TROUBLE SHOOTING CHART

4. WHEN THERE IS AN EXCESSIVE NOISE

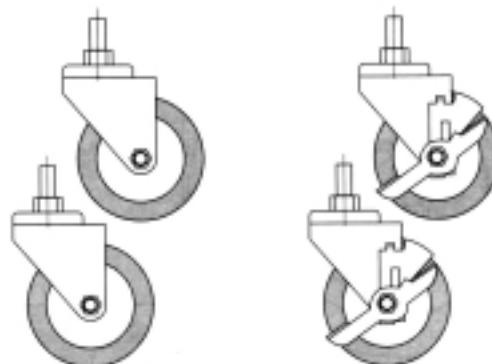




6. PARTS DIAGRAM

1. CASTER or LEVELING LEG PARTS

•Model : TGM-69R, 48R, 45R, 35R, 33R, 22R, 14R, 14RV (Option)



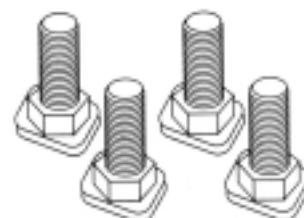
Caster



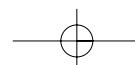
LEVELING LEG
(TGM-14R,
14RV,11R, 11RV)

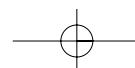


LEVELING LEG
(TGM-5R)



LEVELING LEG
(TGM-69R, 48R, 45R, 35R, 33R, 22R,
22RV)

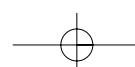
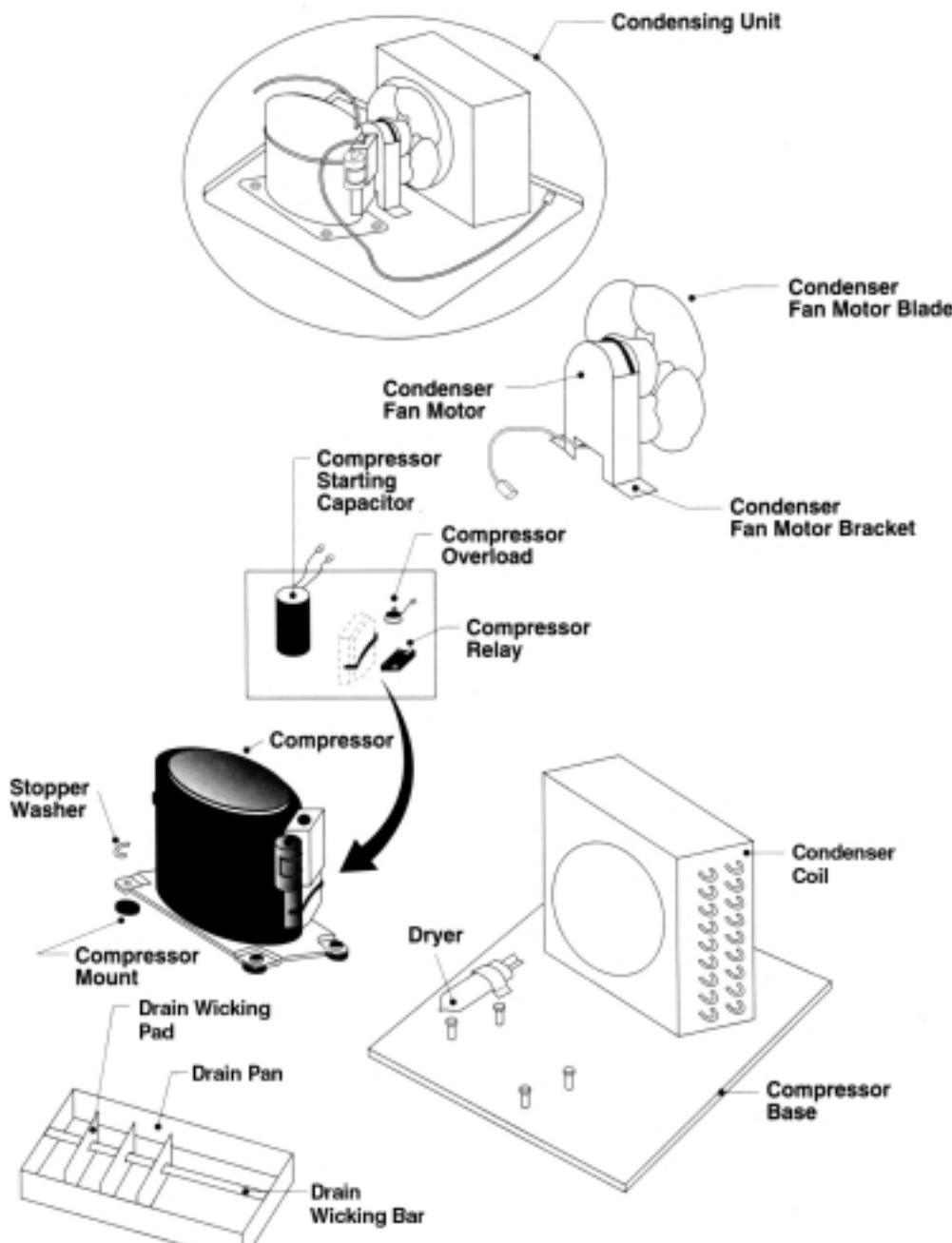


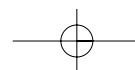
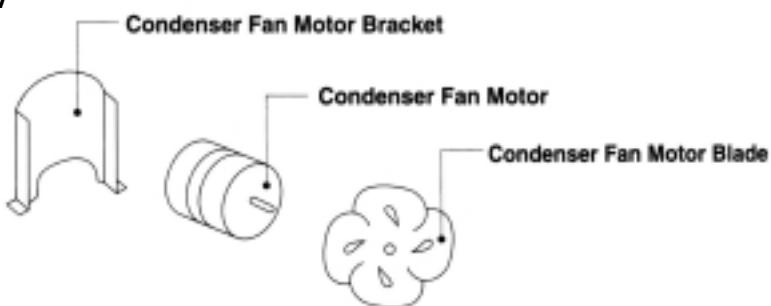
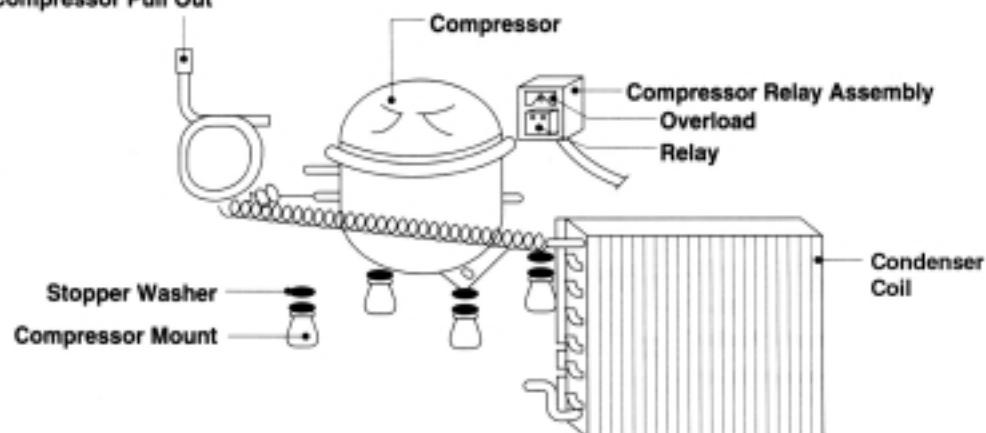
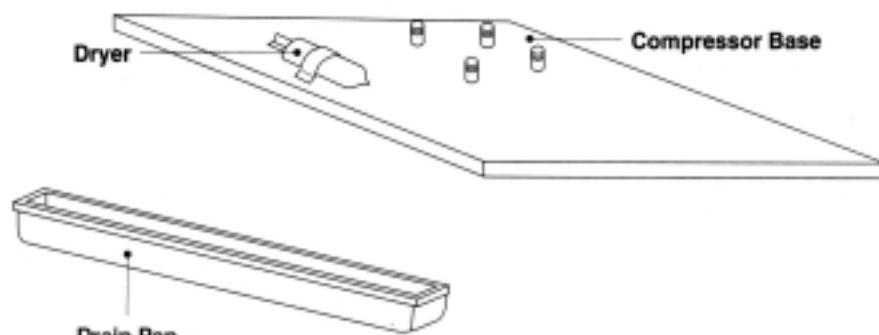
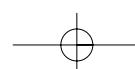


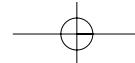
PARTS DIAGRAM

2. COMPRESSOR PARTS

•Model : TGM-69R, 48R, 45R, 35R, 33R

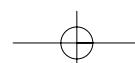
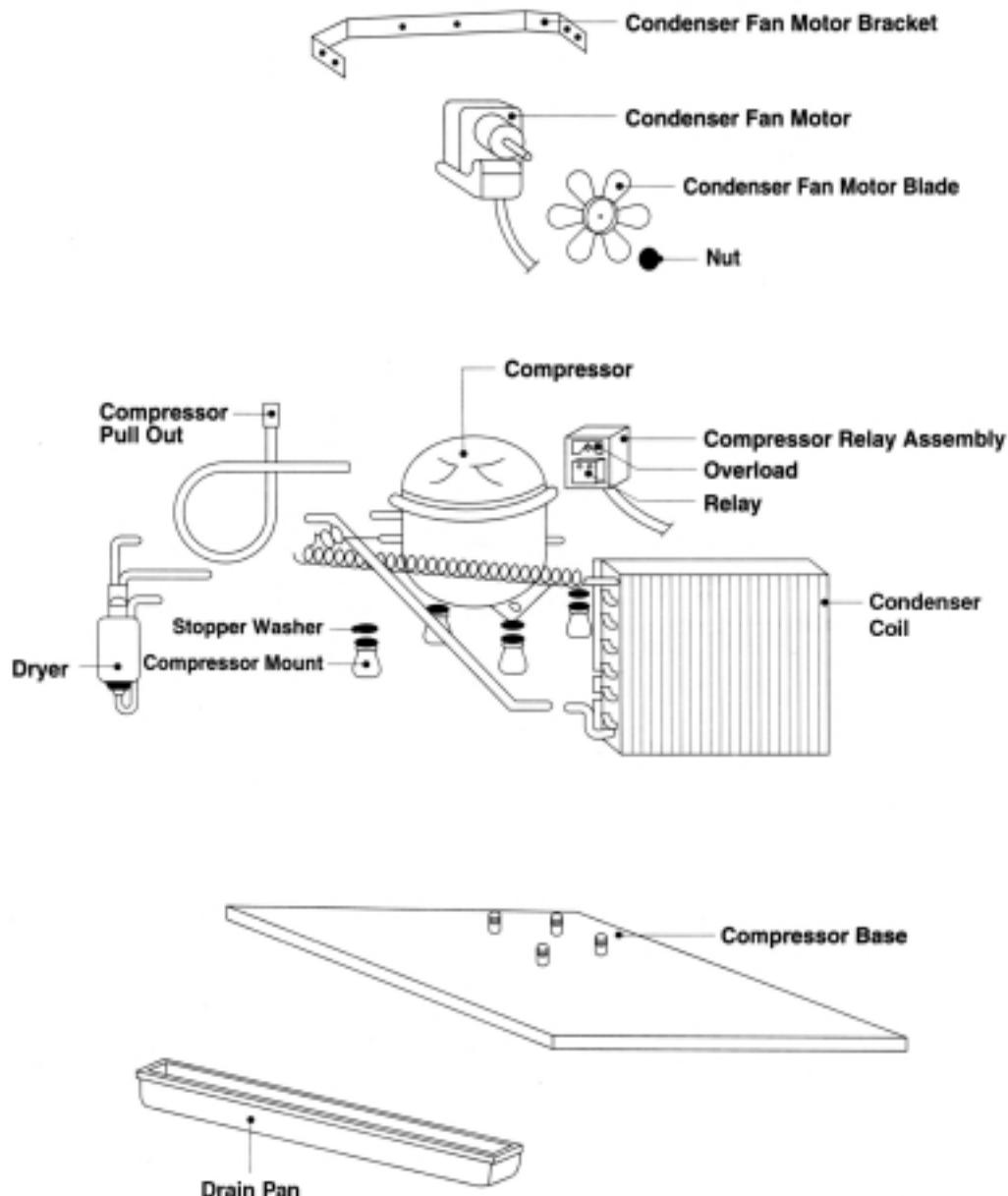


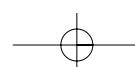
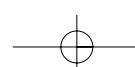
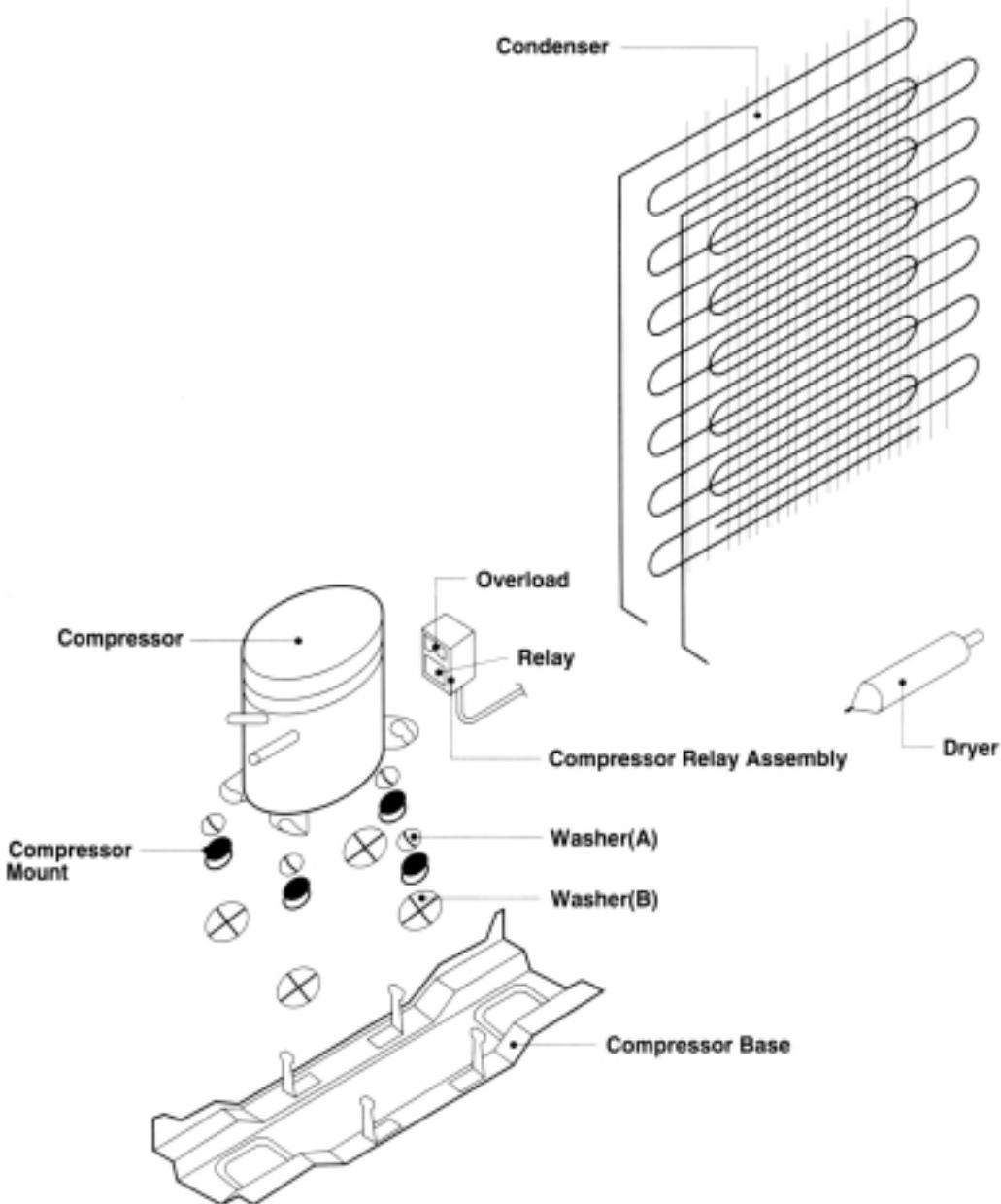
**PARTS DIAGRAM****•Model : TGM-22R, 22RV****Compressor Pull Out****Dryer****Drain Pan**

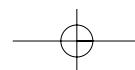


PARTS DIAGRAM

•Model : TGM-14R, 14RV, 11R, 11RV



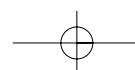
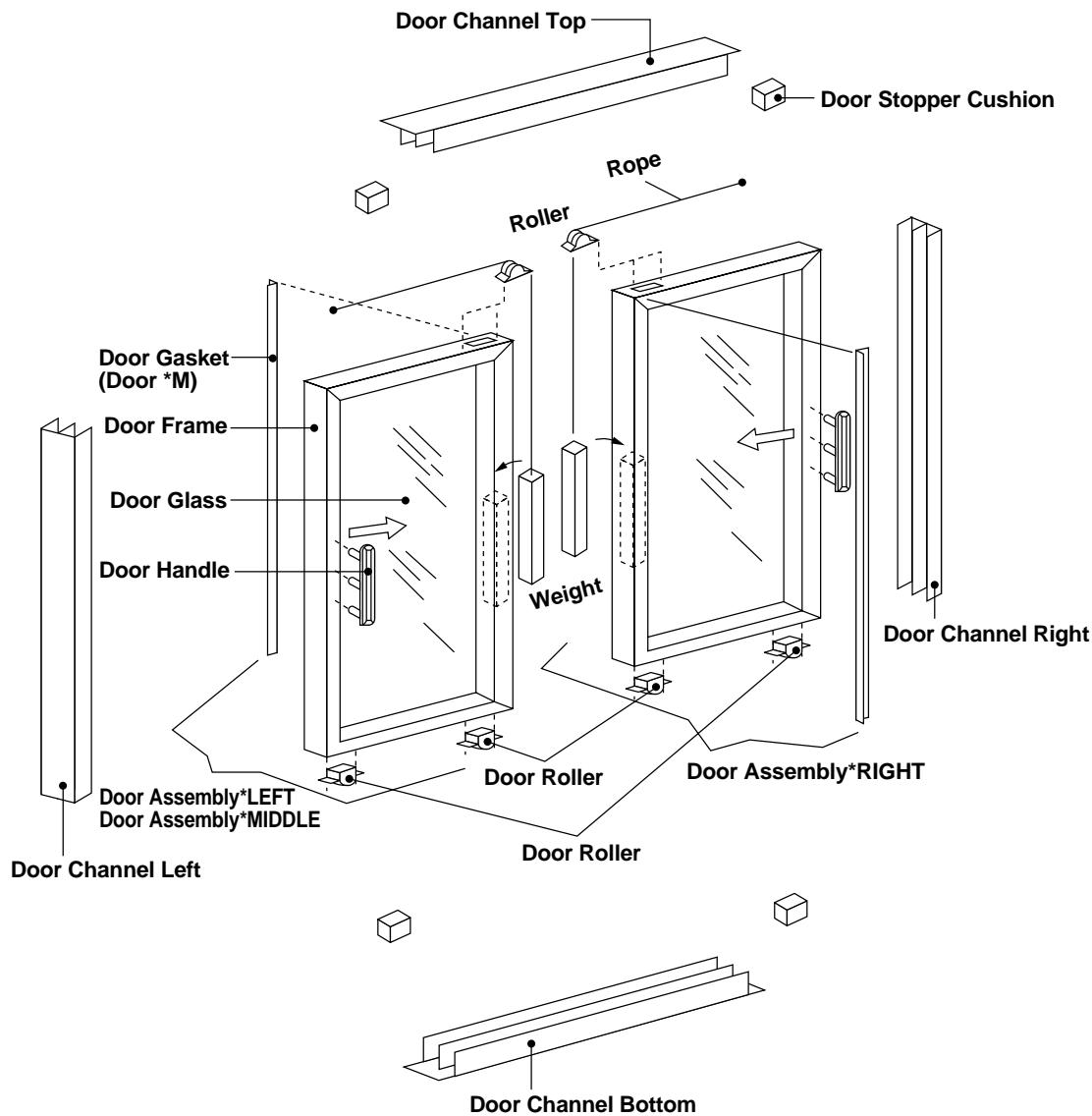
**PARTS DIAGRAM****•Model : TGM-5R**

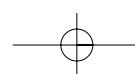


PARTS DIAGRAM

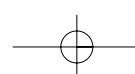
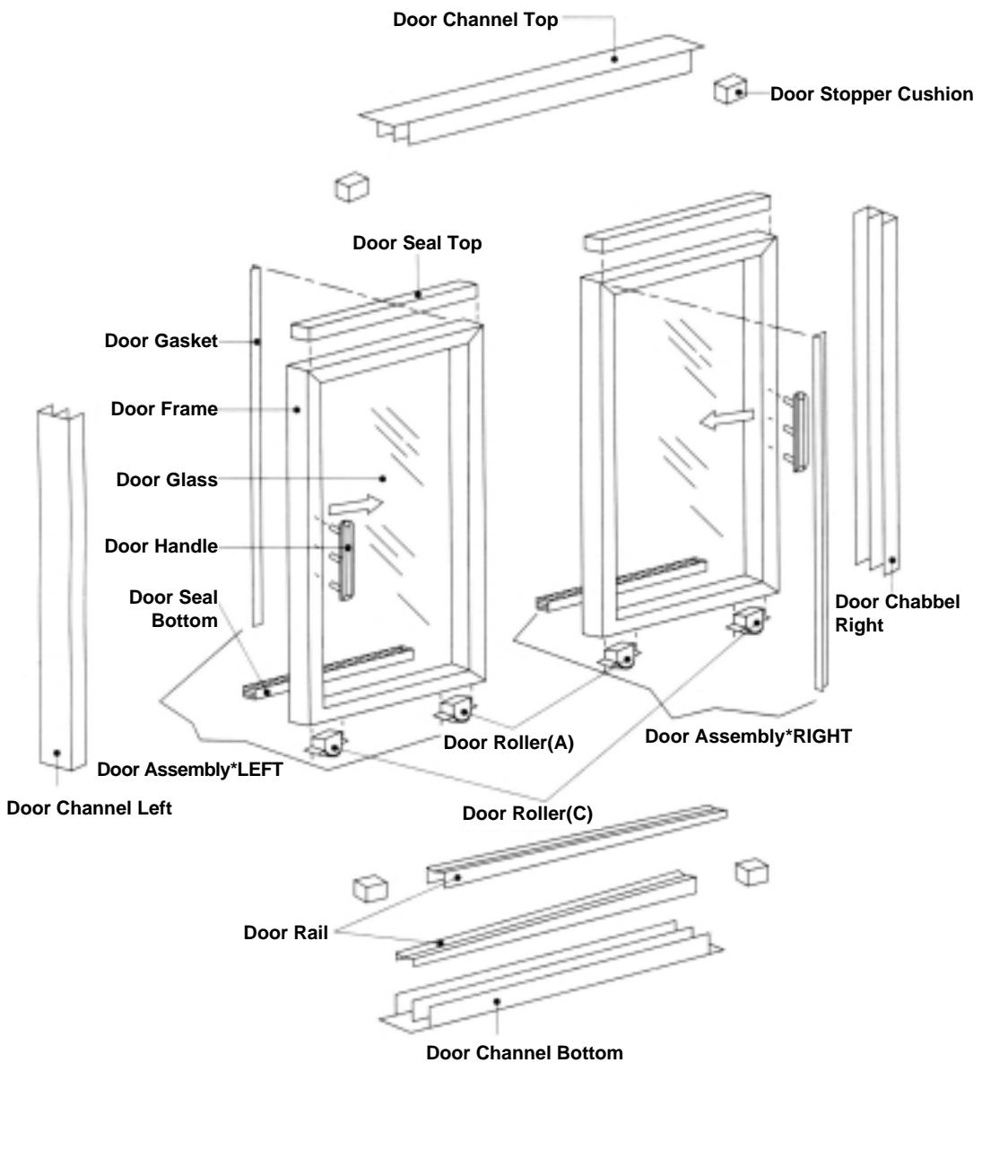
3. DOOR PARTS

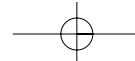
•Model : TGM-69R



**PARTS DIAGRAM**

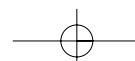
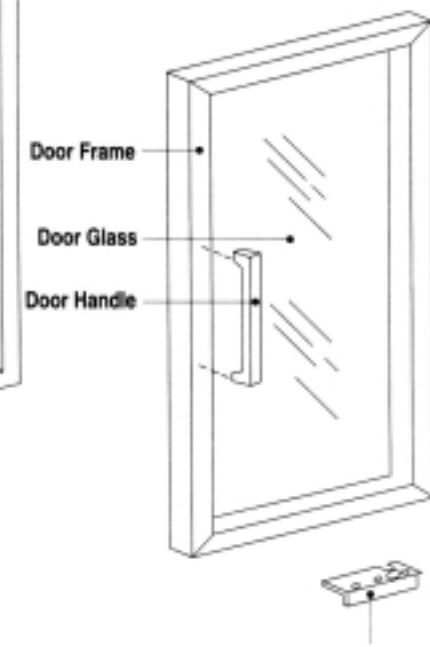
•Model : TGM-48R, 45R, 35R, 33R

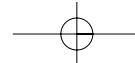
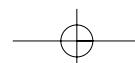
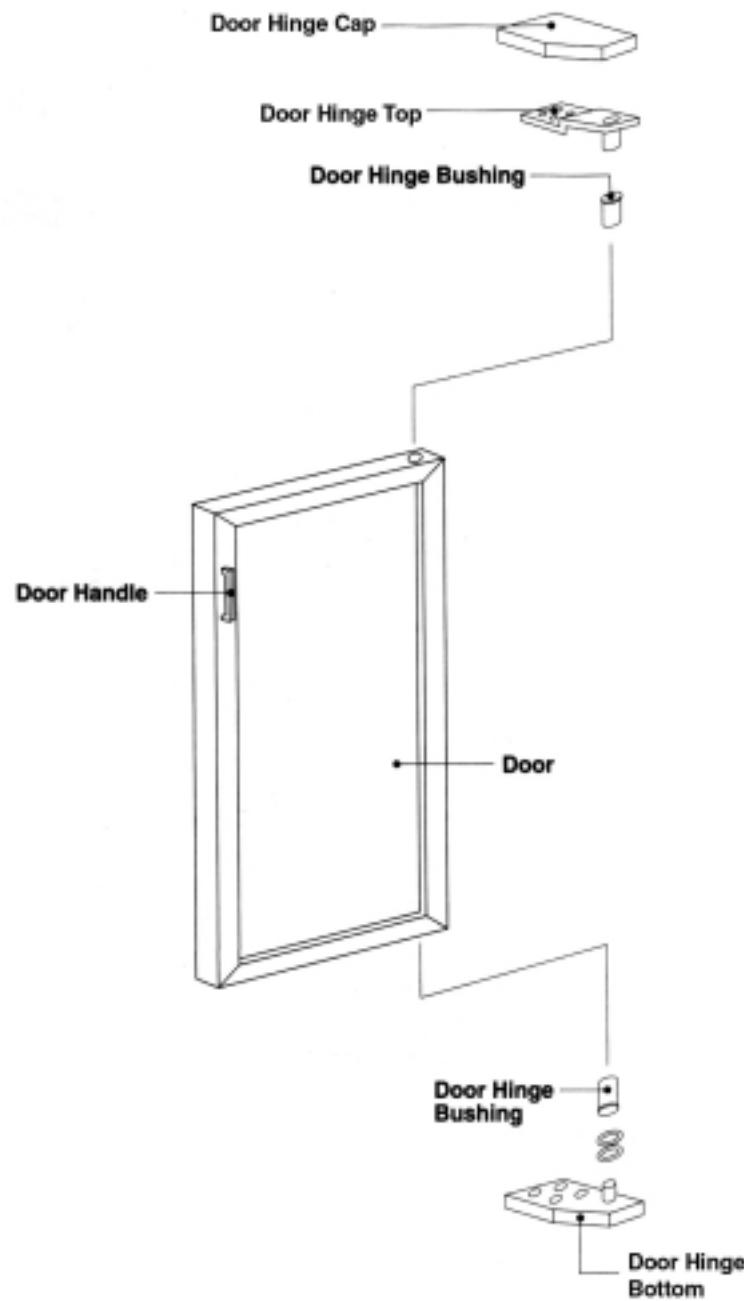


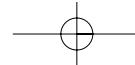


PARTS DIAGRAM

•Model : TGM-22R, 22RV, 14R, 14RV, 11R, 11RV



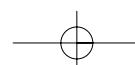
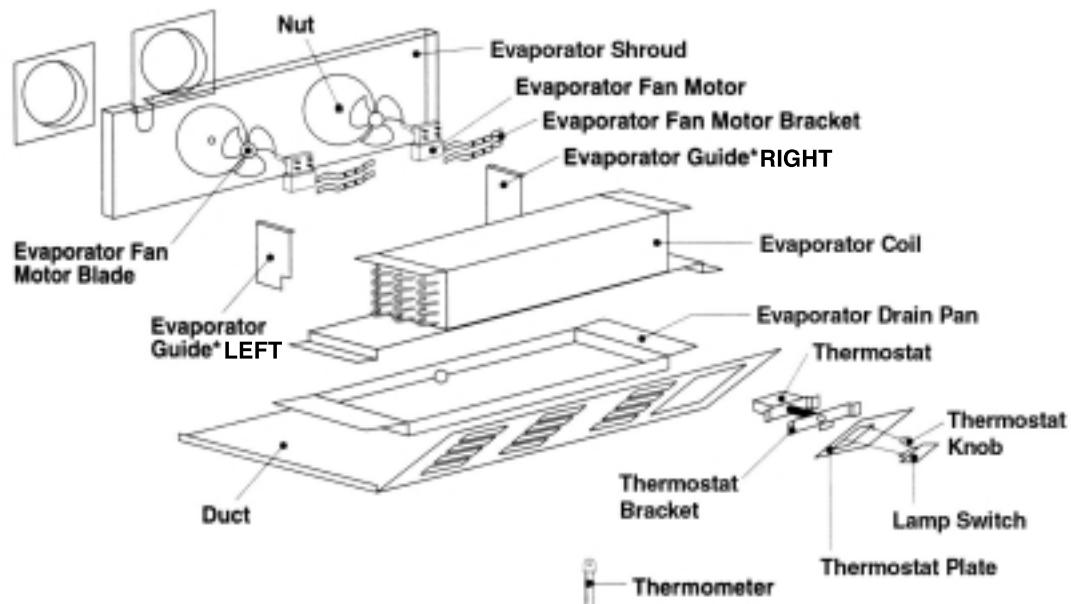
**PARTS DIAGRAM****•Model : TGM-5R**

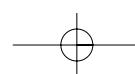
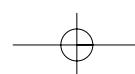
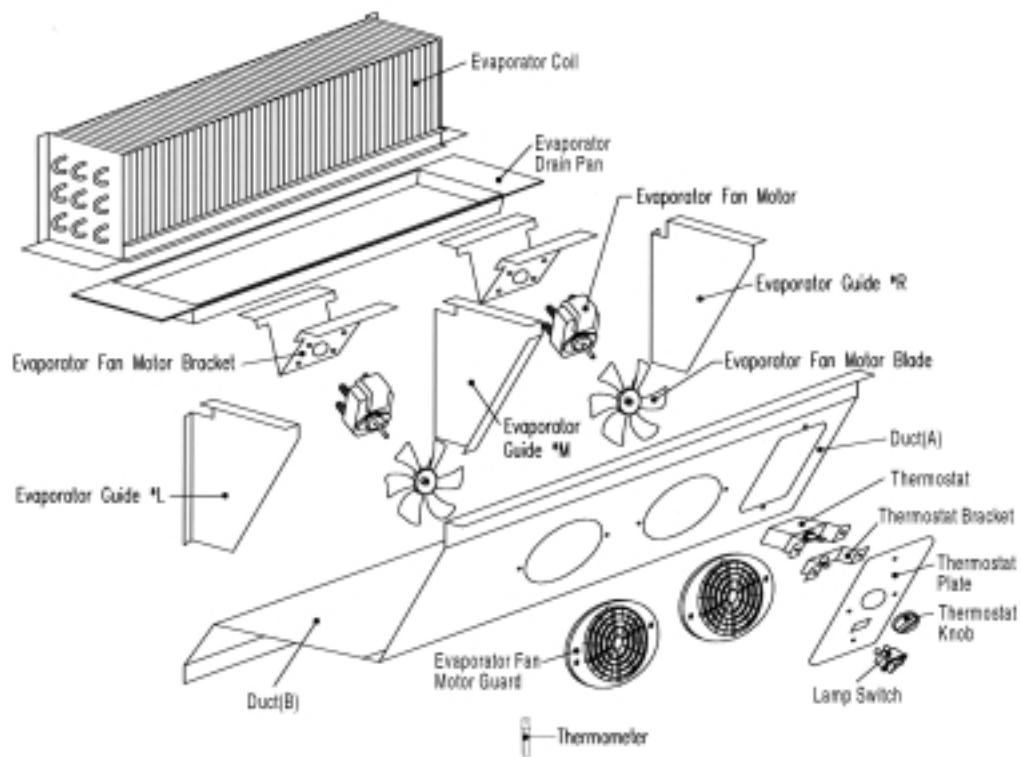


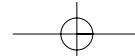
PARTS DIAGRAM

4. EVAPORATOR PARTS

•Model : TGM-48R, 35R

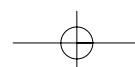
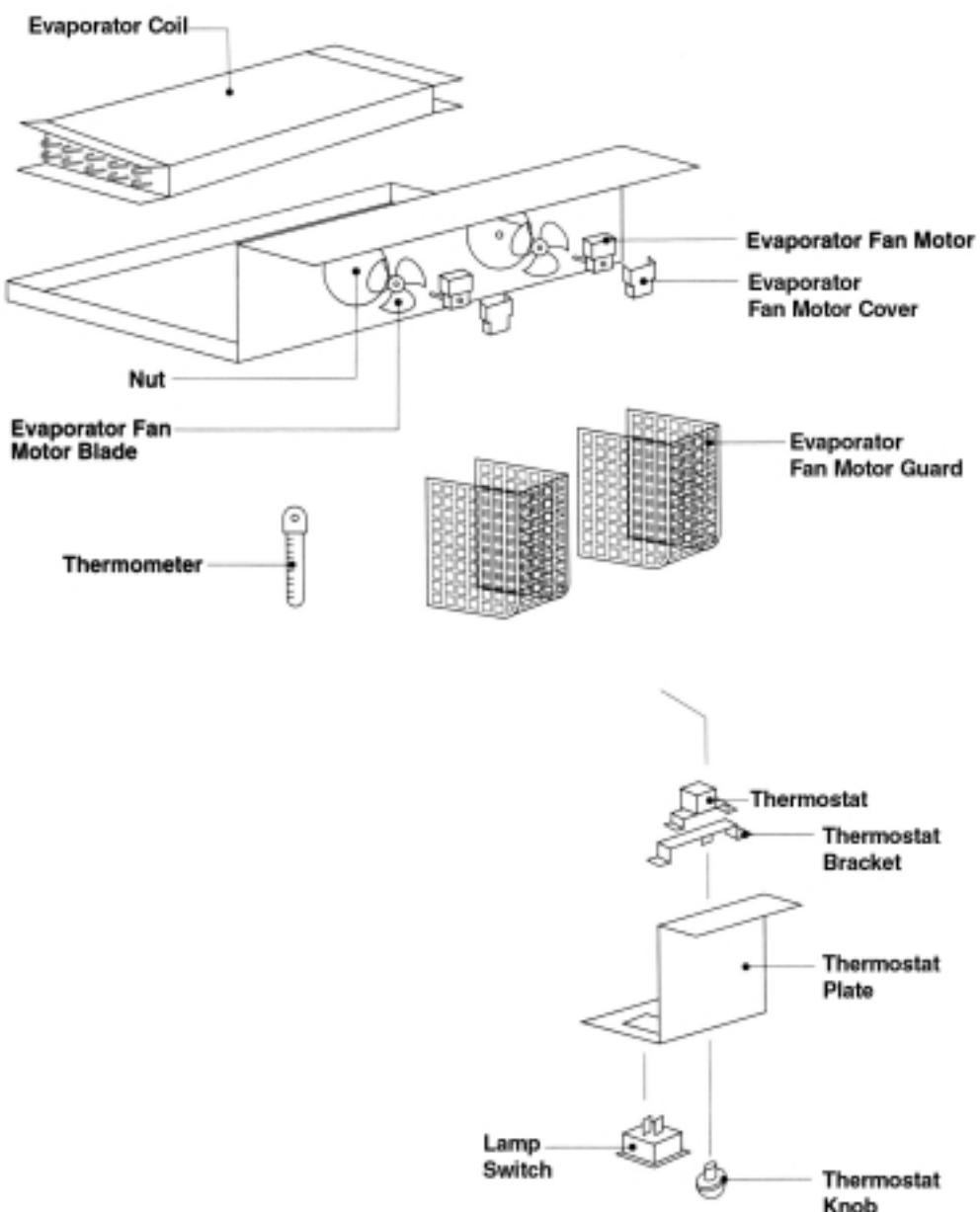


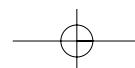
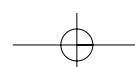
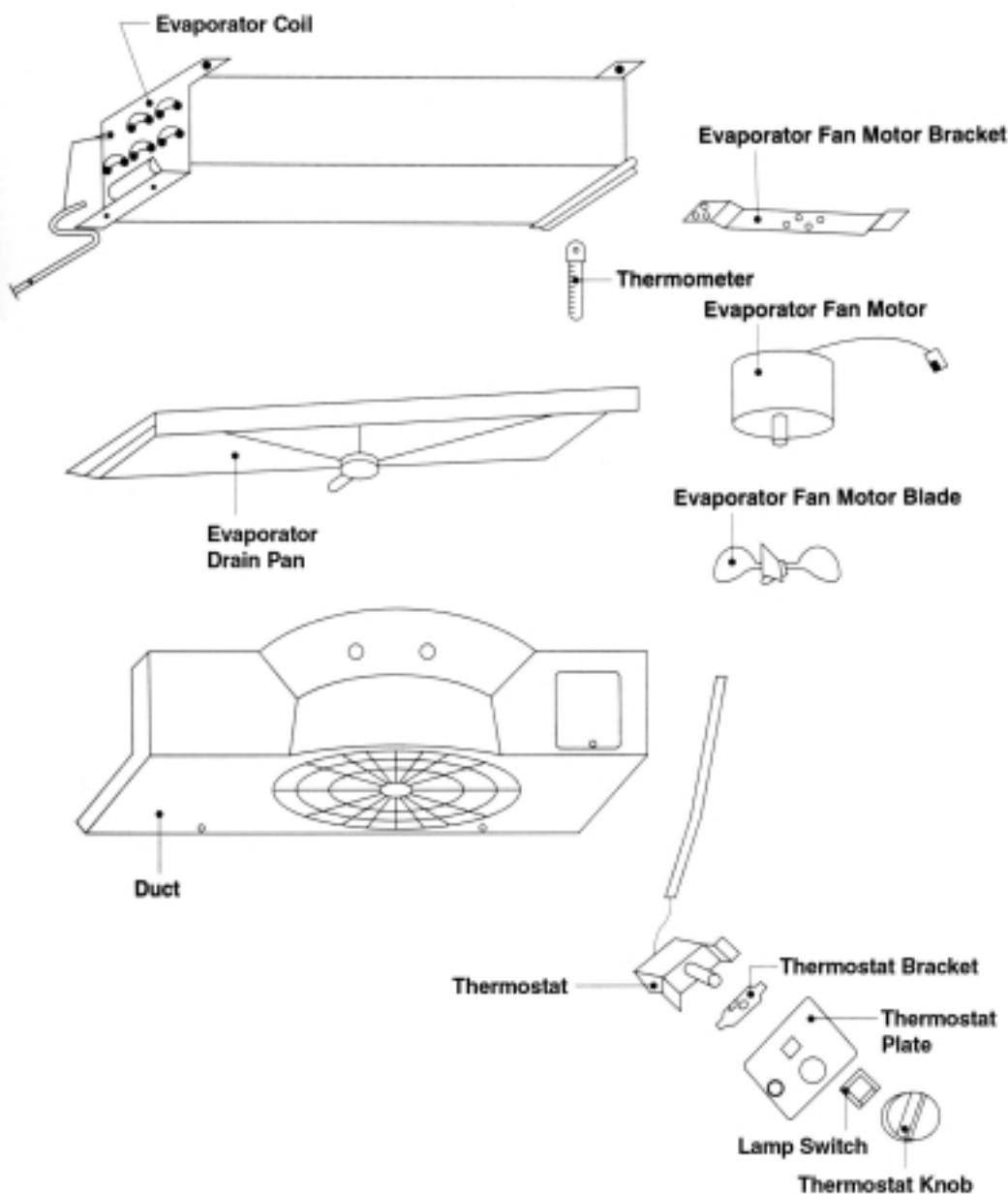
**PARTS DIAGRAM****•Model : TGM-69R, 45R, 33R**

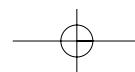


PARTS DIAGRAM

•Model : TGM-22R, 22RV

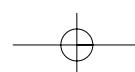
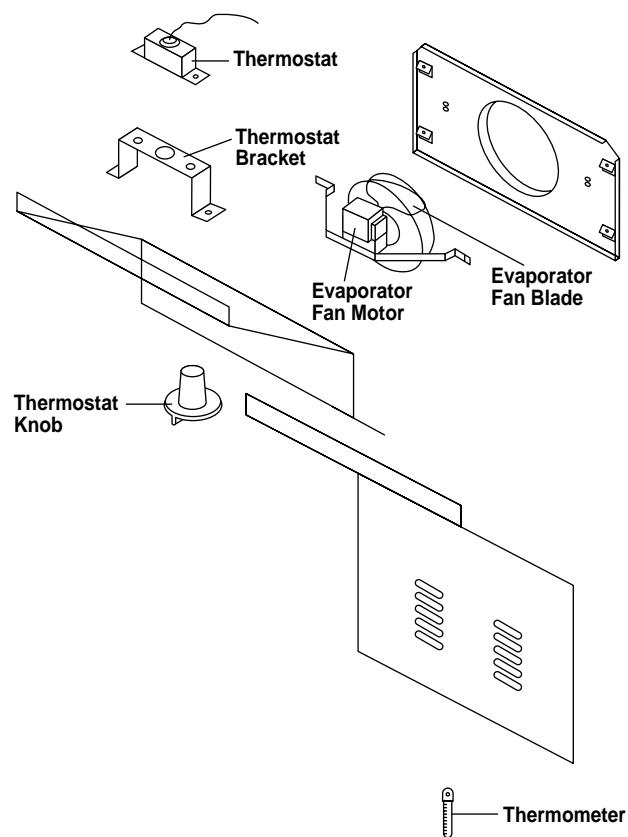


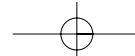
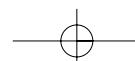
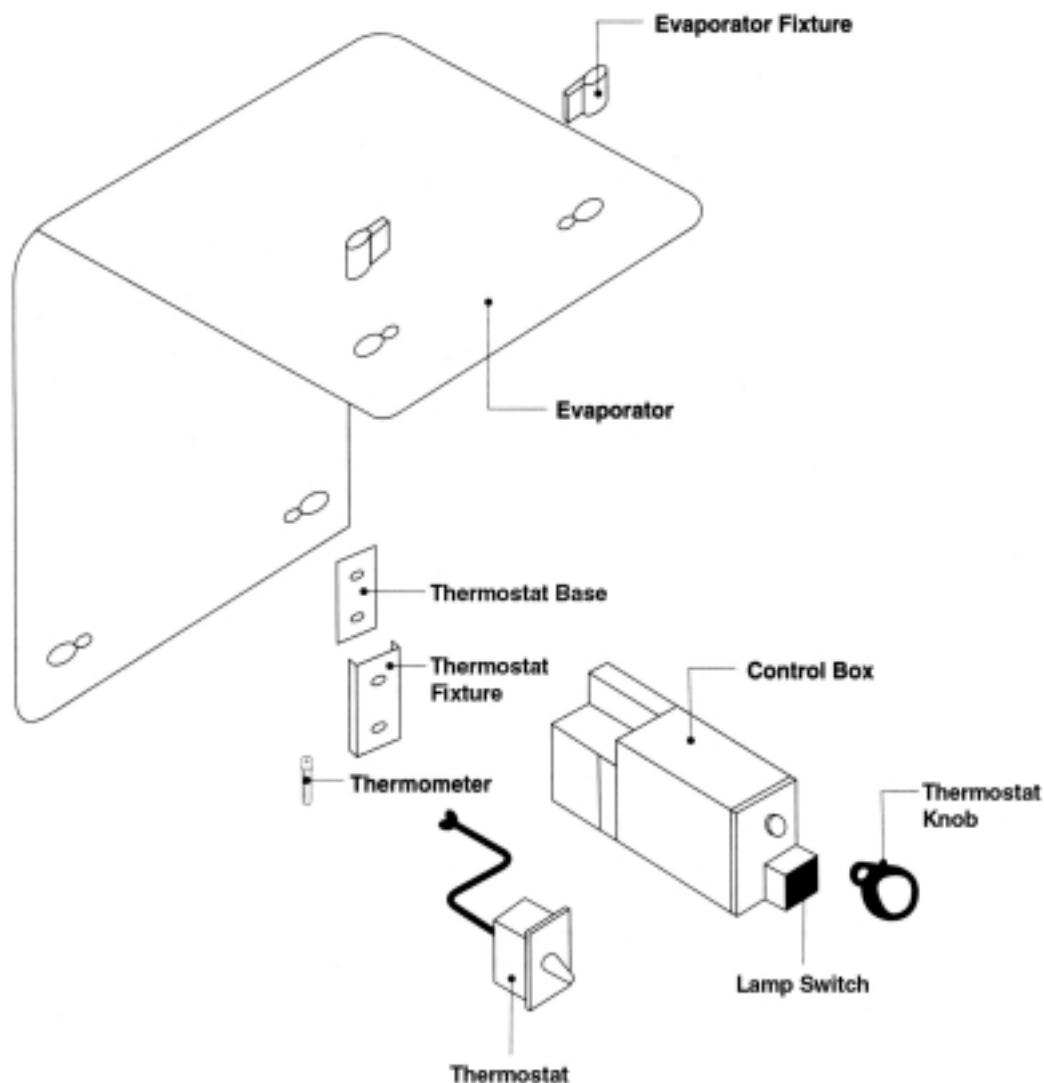
**PARTS DIAGRAM****•Model : TGM-14R, 14RV**

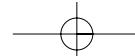


PARTS DIAGRAM

•Model : TGM-11R, 11RV



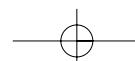
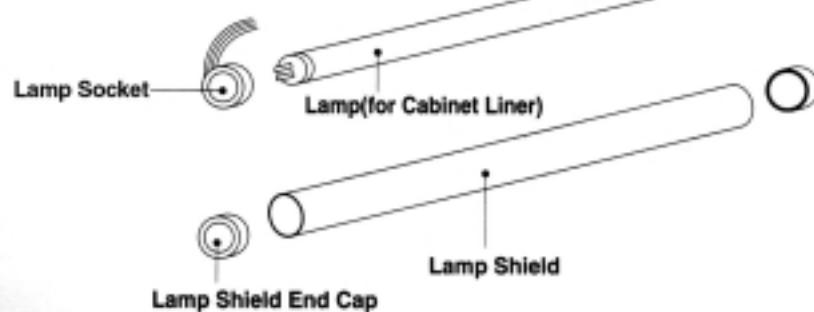
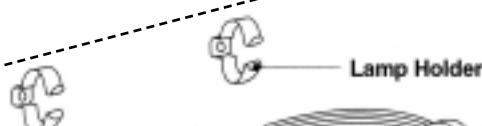
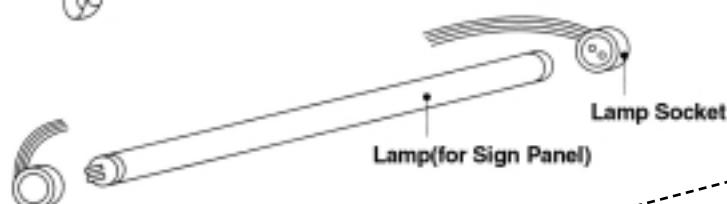
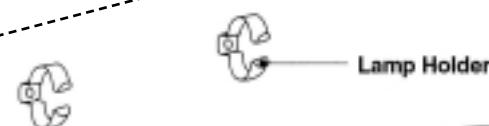
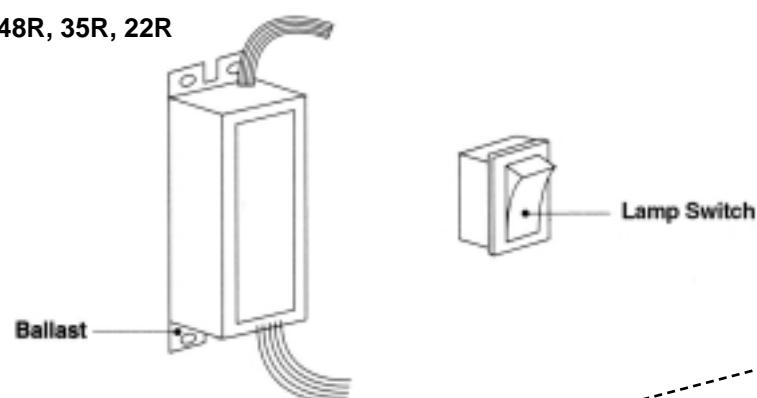
**PARTS DIAGRAM****•Model : TGM-5R**

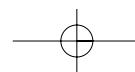


PARTS DIAGRAM

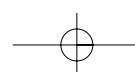
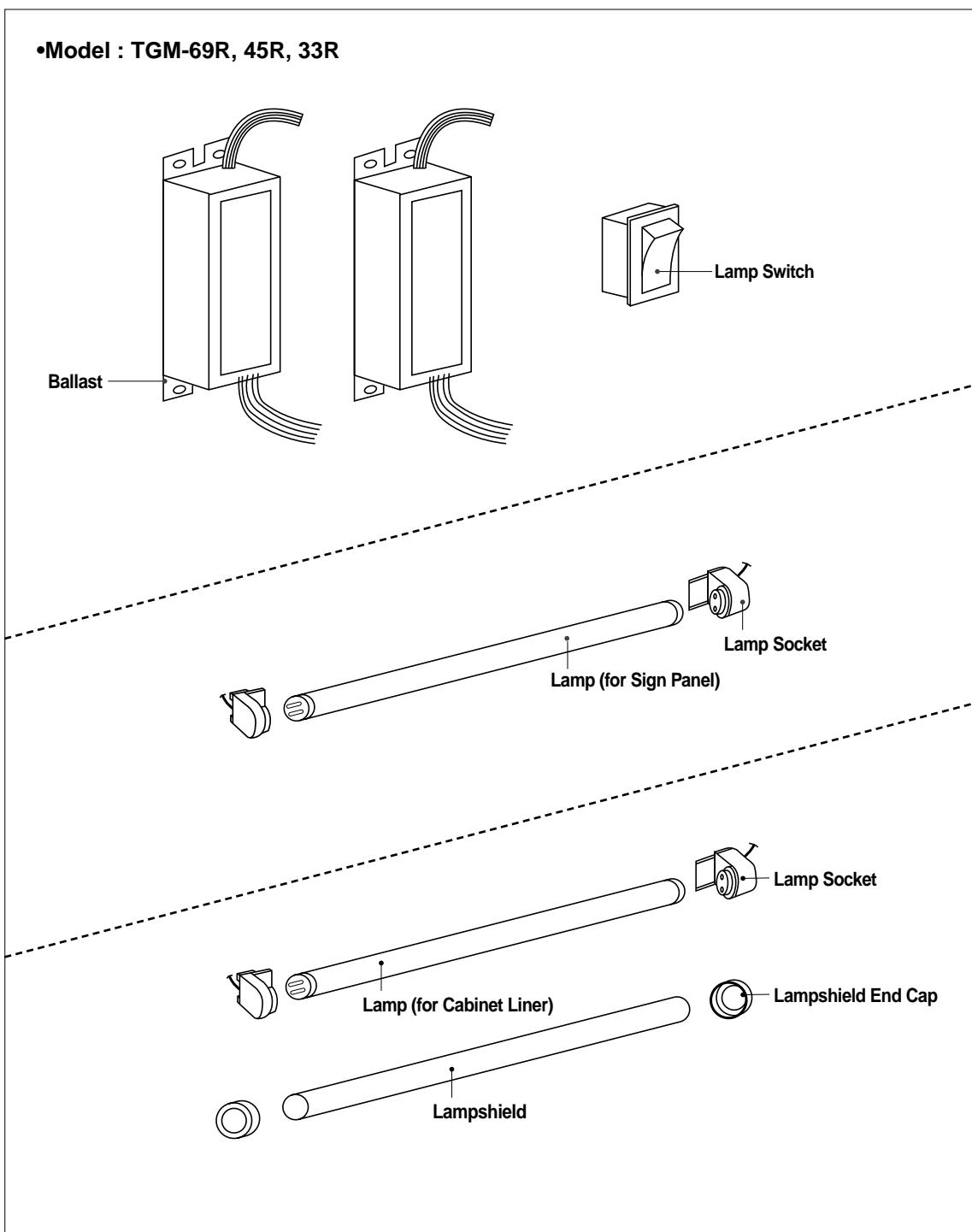
5. LIGHTING PARTS

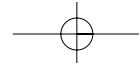
•Model : TGM-48R, 35R, 22R



**PARTS DIAGRAM**

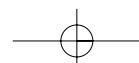
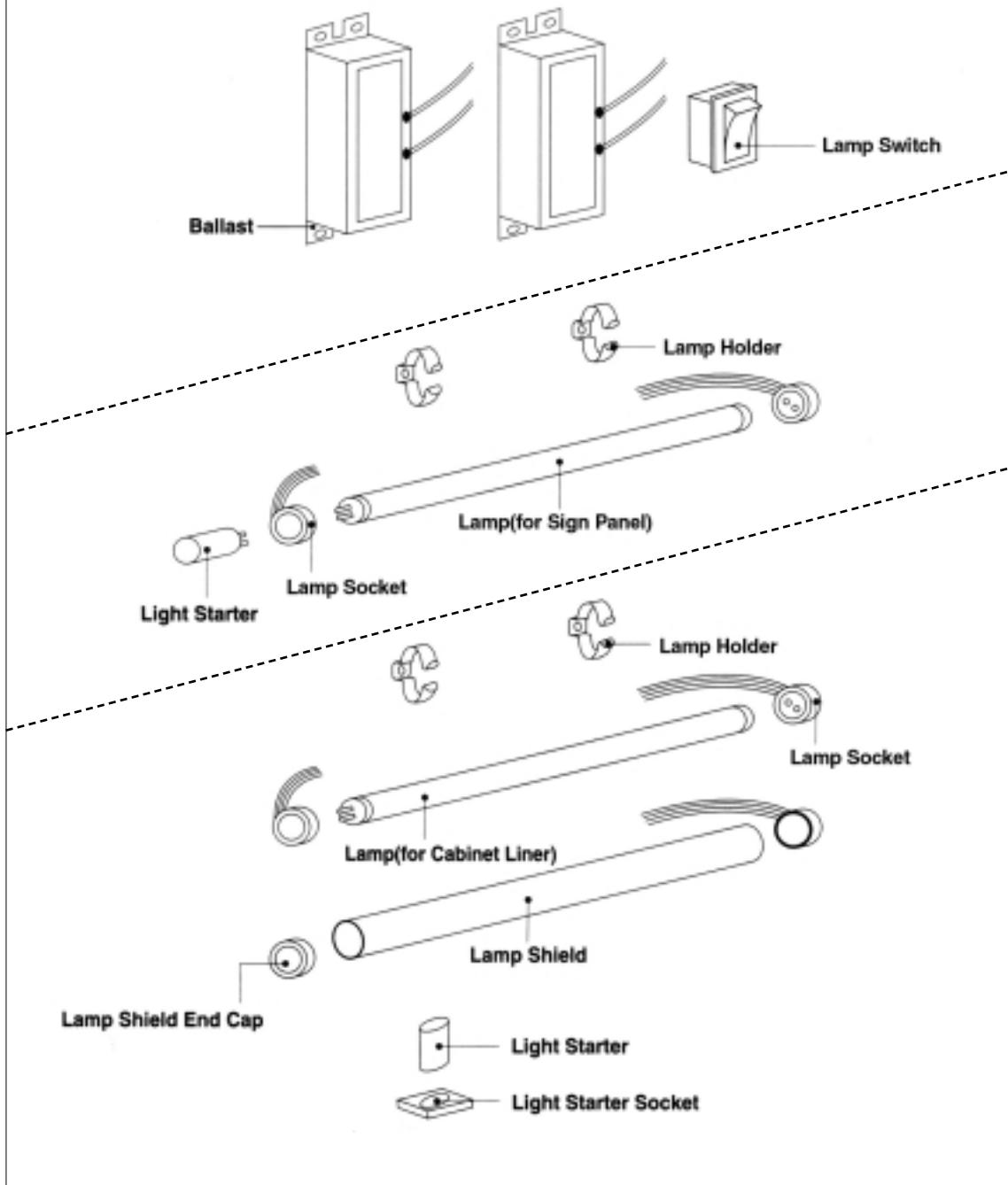
•Model : TGM-69R, 45R, 33R

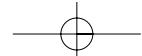
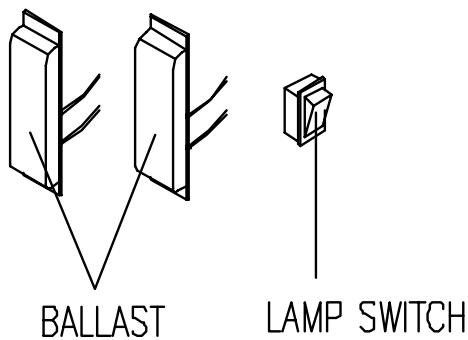
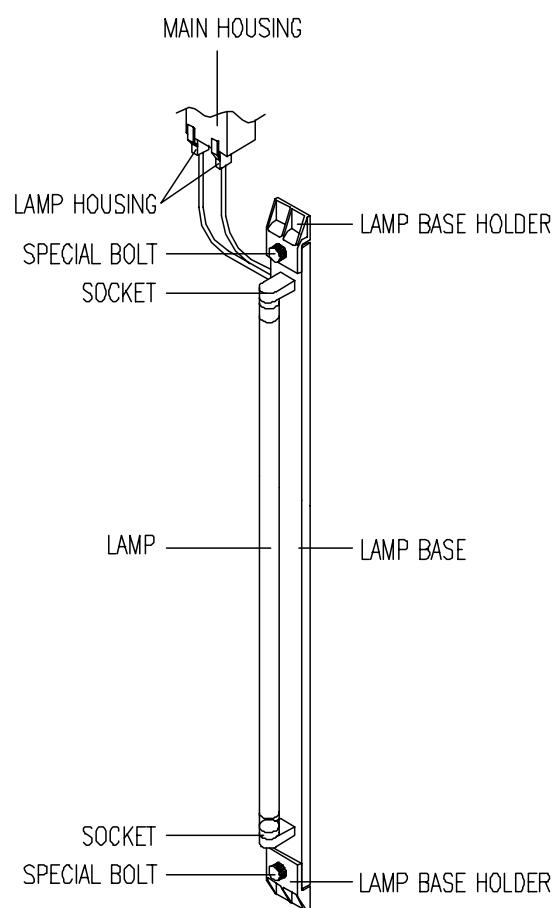
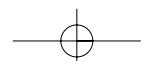
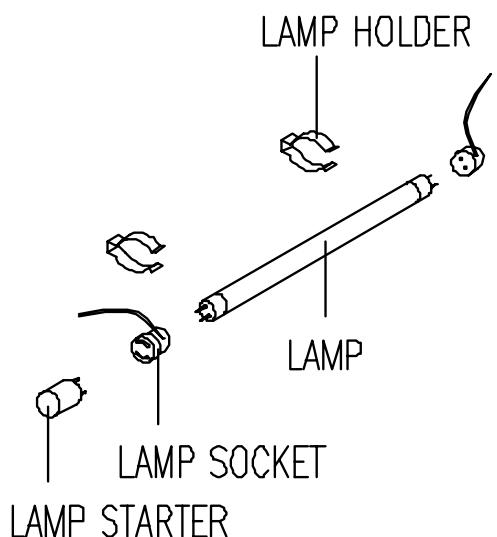


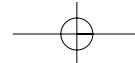


PARTS DIAGRAM

•Model : TGM-14R

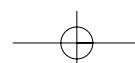
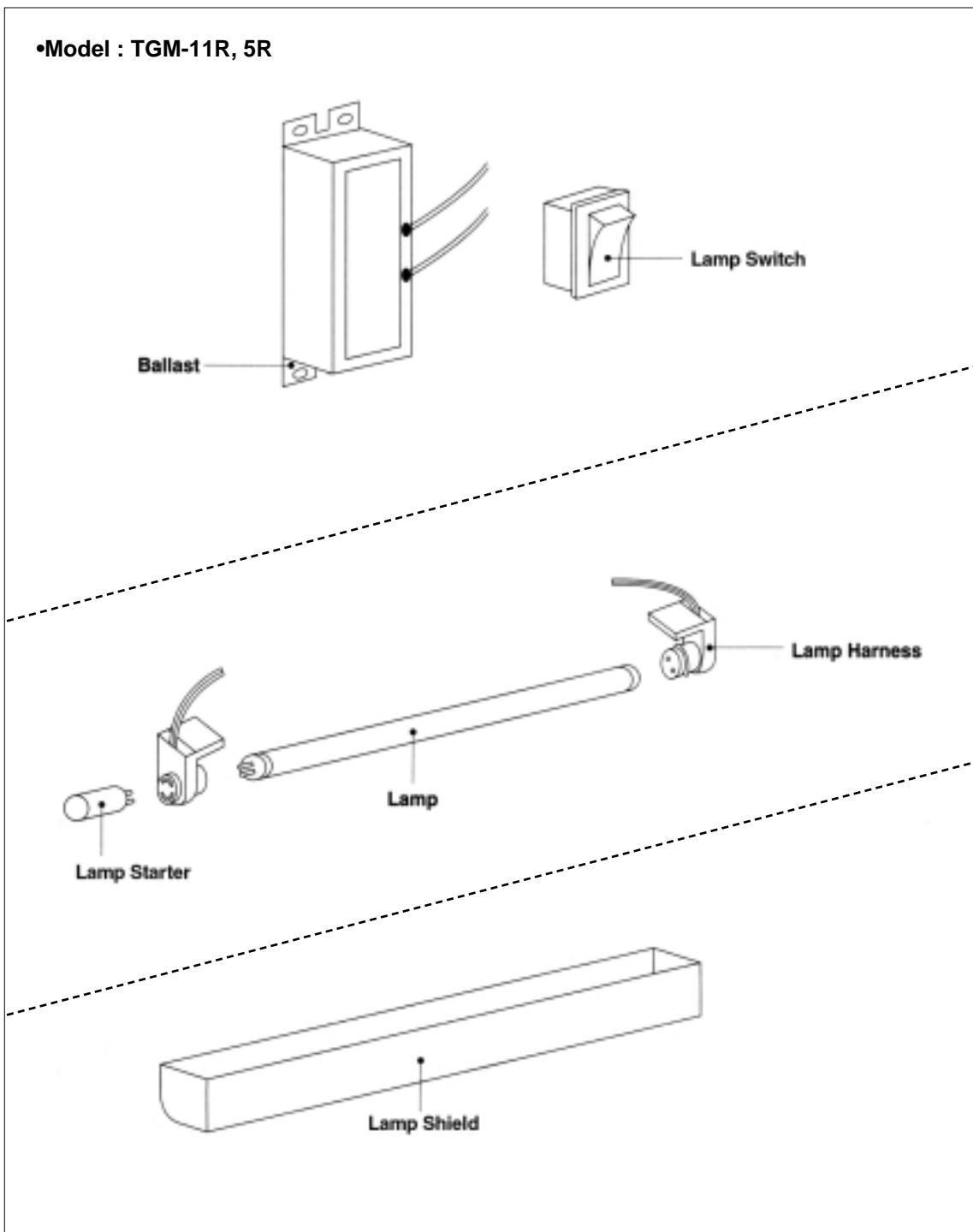


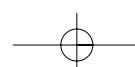
**PARTS DIAGRAM****•Model : TGM-22RV, 14RV, 11RV****•Model : TGM-22RV, 14RV, 11RV****•Model : TGM-22RV, 14RV**



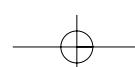
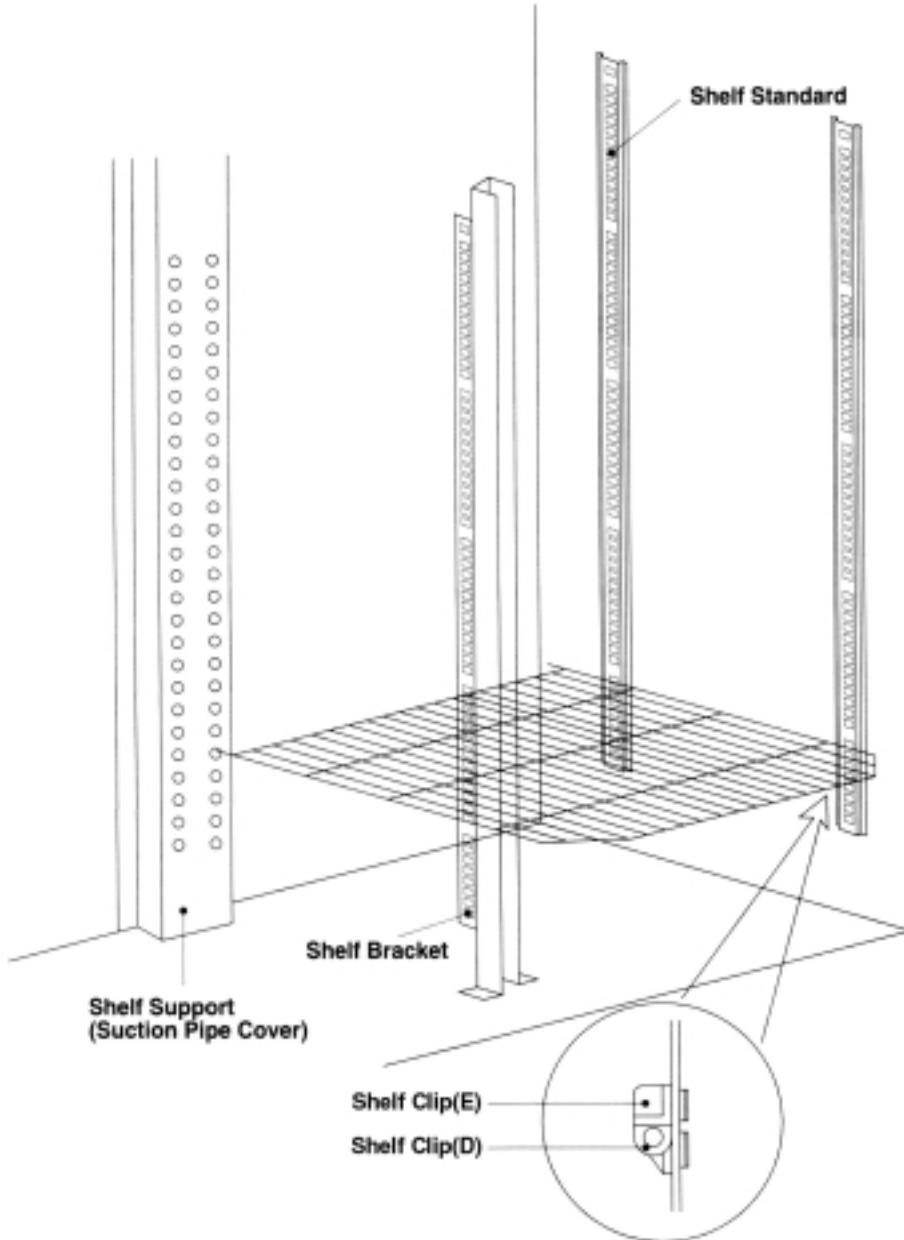
PARTS DIAGRAM

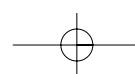
•Model : TGM-11R, 5R



**PARTS DIAGRAM****6. SHELF PARTS**

•Model : TGM-69R, 48R, 35R

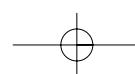
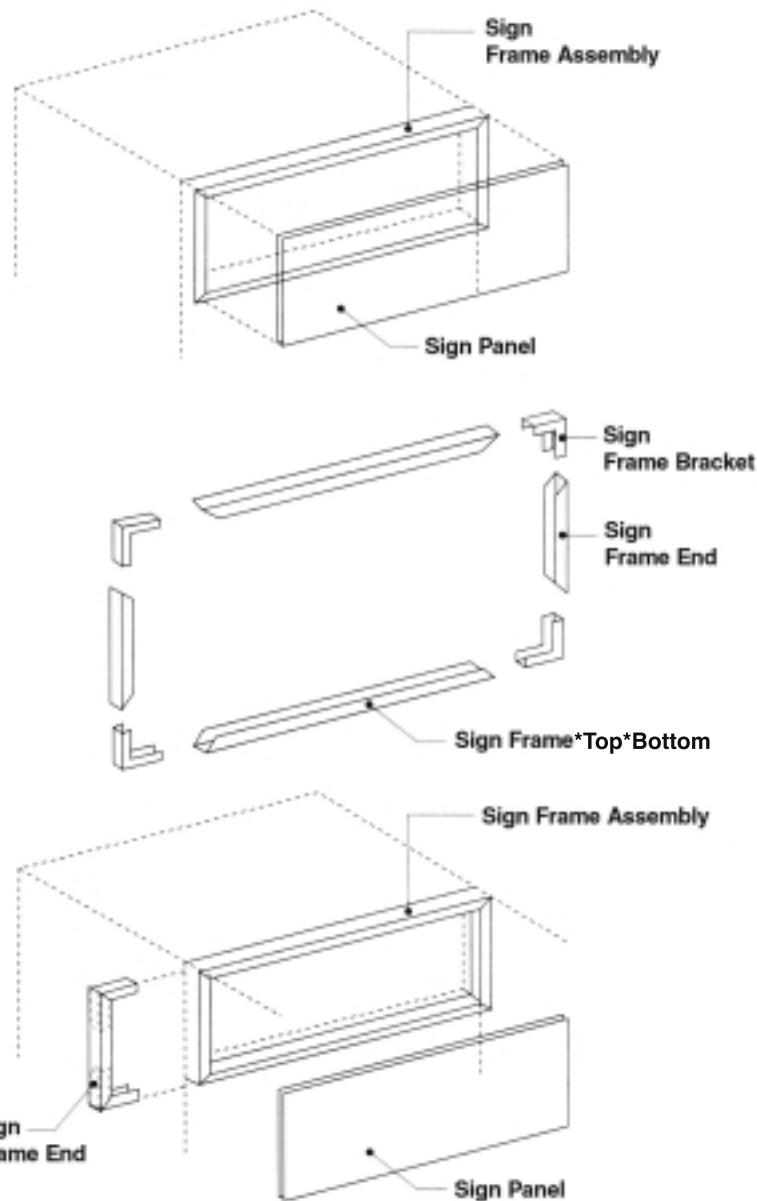


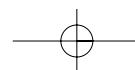


PARTS DIAGRAM

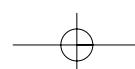
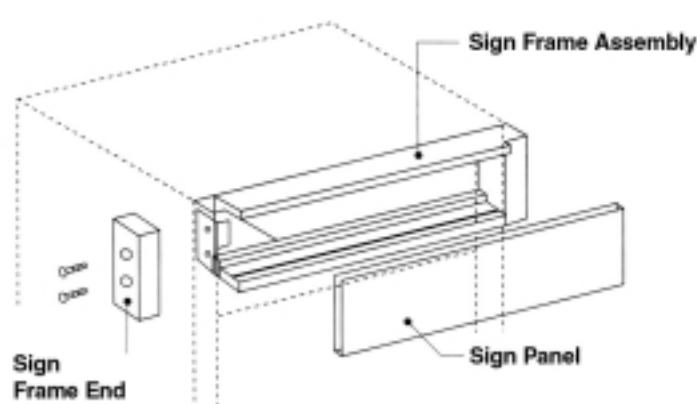
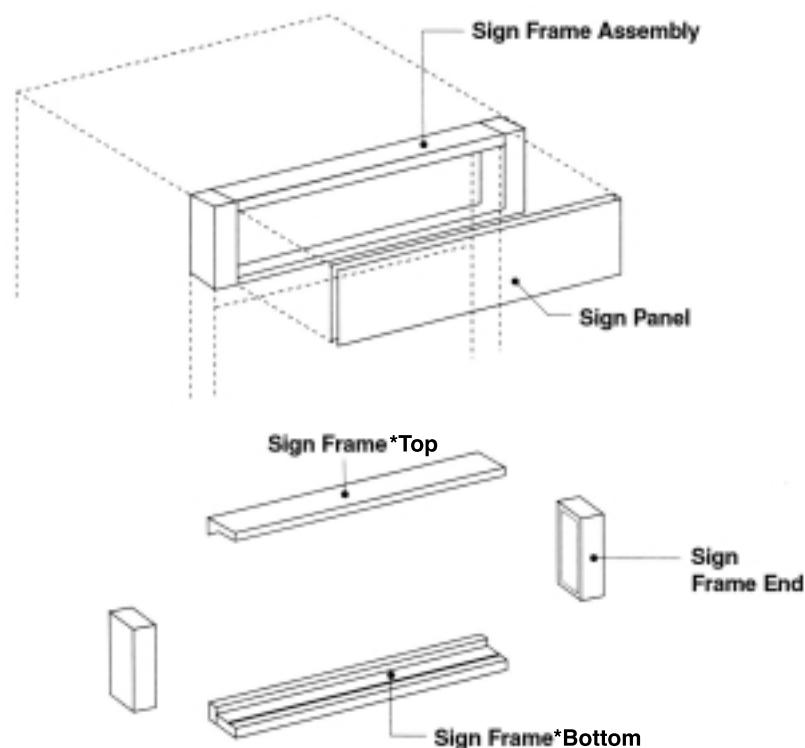
7. ADVERTISING & ADVERTISING FRAME PARTS

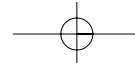
•Model : TGM-69R, 48R, 35R



**PARTS DIAGRAM**

•Model : TGM-45R, 33R, 22R, 22RV, 14R, 14RV

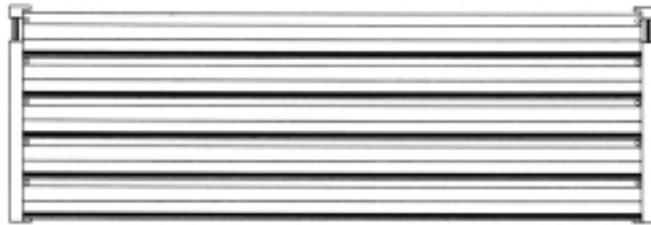




PARTS DIAGRAM

8. GRILL PARTS

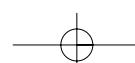
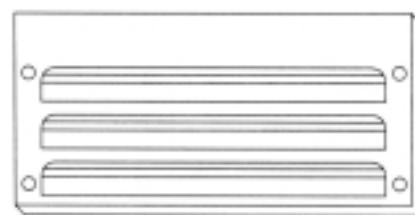
•Model : TGM-69R, 48R, 45R, 35R, 33R

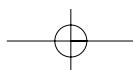


•Model : TGM-22R, 22RV



•Model : TGM-14R, 14RV, 11R, 11RV



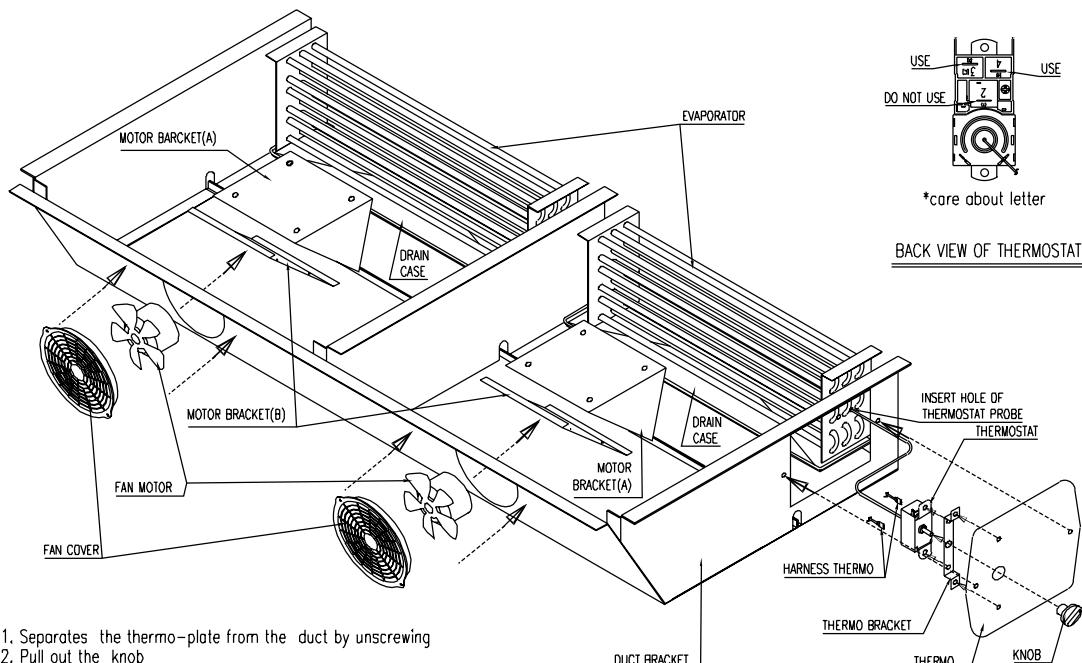


PARTS DIAGRAM

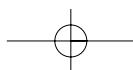
9. HOW TO REPLACE THE THERMOSTAT

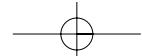
•Model : TGM-69R

How to replace the THERMOSTAT



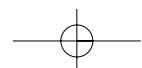
1. Separates the thermo-plate from the duct by unscrewing
2. Pull out the knob
3. Separate the THERMO-BRACKET from the THERMO-PLATE by unscrewing
4. Separate The THERMOSTAT from The THERMO-BRACKET by unscrewing
5. Pull The HARNESS THERMO out of The THERMOSTAT
6. After replacing The THERMOSTAT, Put The BLACK WIRE in "3" TAP and The GRAY WIRE in "4" TAP
7. Insert The THERMOSTAT-PROBE into The INSERT-HOLE of The EVAPORATOR
8. After STEP 7, Assemble above parts from STEP 5 to 1

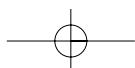




7. PARTS LIST

| Part Name | Part Number | Description | Model | | | | | | | |
|-----------------------------------|-------------|------------------------------|-------|----|----|----|----|----|----|----|
| | | | 69 | 48 | 45 | 35 | 33 | 22 | 14 | 11 |
| Caster & Leveling Legs | | | | | | | | | | |
| Castor | 30265L0100 | 1/2" Stem(TP5040-22-HDP-TLE) | 2 | 2 | 2 | 2 | 2 | 2 | 2 | |
| Caster | 30265L0200 | 1/2" Stem(TP5040-22-HDP) | 2 | 2 | 2 | 2 | 2 | 2 | 2 | |
| Leveling Leg | 30260K0100 | 1/2" | 4 | 4 | 4 | 4 | 4 | 4 | | |
| Leveling Leg | 3012101300 | BLACK | | | | | | | 2 | 2 |
| Leveling Leg | 4006D32533 | BLACK | | | | | | | | 2 |
| Compressors | | | | | | | | | | |
| Compressor | 30200K2900 | AKA4482YXA(TECUMSEH) | 1 | | | | | | | |
| Compressor | 30200J2100 | AEA4448YXA(TECUMSEH) | | | | | | 1 | | |
| Compressor | 30200A4700 | AKA4476YXA(TECUMSEH) | 1 | 1 | 1 | | | | | |
| Compressor | 3952127G10 | HBL27YE-1(DAEWOO) | | | | | | 1 | 1 | 1 |
| Compressor | 3953111E10 | HFL11Y-1(DAEWOO) | | | | | | | | 1 |
| Compressor Relay | 3817906900 | PTC068 | | | | | | 1 | 1 | 1 |
| Compressor Relay Assembly | 30227H0911 | Including Harness | | | | | | 1 | | |
| Compressor Relay Assembly | 30227F0911 | Including Harness | | | | | | | 1 | 1 |
| Compressor Relay Assembly | 30200A6411 | Including Harness | | | | | | | | 1 |
| Compressor Overload | 3817908600 | 4TM-783RHB(TEXAS INS.) | | | | | | 1 | | |
| Compressor Overload | 3817910600 | 4TM-783SHB(TEXAS INS.) | | | | | | | 1 | 1 |
| Compressor Overload | 3817906500 | 4TM-293THB(TEXAS INS.) | | | | | | | | 1 |
| Compressor Running Capacitor | 400EL15130 | 230V 10uF | | | | | | 1 | 1 | 1 |
| Compressor Running Capacitor | 401RD35050 | 220V 100uF | | | | | | 1 | 1 | 1 |
| Condenser | 30200K3001 | Refer Parts Diagram | 1 | | | | | | | |
| Condenser | 30200A2201 | Refer Parts Diagram | 1 | 1 | 1 | 1 | 1 | | | |
| Condenser | 30200H1000 | Refer Parts Diagram | | | | | | 1 | | |
| Condenser | 30200F0816 | Refer Parts Diagram | | | | | | | 1 | |
| Condenser | 30200F1110 | Refer Parts Diagram | | | | | | | | 1 |
| Condenser | 30200A7204 | Refer Parts Diagram | | | | | | | | 1 |
| Condenser Fan Motor | 3963220410 | IS-4420DWSG-1 | 1 | 1 | 1 | 1 | 1 | 1 | | |
| Condenser Fan Motor | 3963320410 | IS-4420DWSR-1 | | | | | | | 1 | |
| Condenser Fan Motor | 3963226710 | IS-3225DWSQ-2 | | | | | | | 1 | 1 |
| Condenser Fan Motor Blade | 30218A0100 | AL ø 250 | 1 | 1 | 1 | 1 | 1 | 1 | | |
| Condenser Fan Motor Blade | 30218B0100 | AL ø 225 | | | | | | | 1 | |
| Condenser Fan Motor Blade | 30218F0100 | Zytel ø 150 | | | | | | | 1 | 1 |



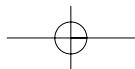


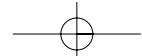
PARTS LIST

| Part Name | Part Number | Description | Model | | | | | | | | |
|-------------------|-------------|-------------------------|-------|----|----|----|----|----|----|----|---|
| | | | 69 | 48 | 45 | 35 | 33 | 22 | 14 | 11 | 5 |
| Dryer | 30268A0100 | 30g Refer Parts Diagram | 1 | 1 | 1 | 1 | 1 | | | | |
| Dryer | 30268H0100 | 30g Refer Parts Diagram | | | | | | 1 | | | |
| Dryer | 30268F0403 | 30g Refer Parts Diagram | | | | | | | 1 | 1 | |
| Dryer | 30268K0100 | 30g Refer Parts Diagram | 1 | | | | | | | | |
| Dryer | 3016801300 | 10g Refer Parts Diagram | | | | | | | | 1 | |
| Dryer | 30268Q0300 | C-052-S | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Power Cord | 30213A1000 | KKP-30B | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Power Cord Clamp | 30212A0600 | SPG | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Drain Wicking Pad | 30245A0700 | | 1 | 1 | 1 | 1 | 1 | 1 | | | |
| Drain Pan | 30211J0100 | HIPS | 1 | 1 | 1 | 1 | 1 | | | | |
| Drain Pan | 3021100001 | HIPS | | | | | | 1 | 1 | 1 | |
| Drain Wicking Bar | 30230J0700 | PVC-H | 1 | 1 | 1 | 1 | 1 | | | | |

Doors

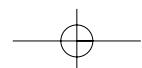
| | | | | | | | | | | | |
|------------------|------------|----------------------|---|---|---|---|---|---|---|---|--|
| Brush Seal | 30277A1301 | Bottom | 1 | 1 | 1 | 1 | 1 | | | | |
| Door Hinge Cap | 4009G51041 | PE Plastic White | | | | | | | | 1 | |
| Door Assembly *R | 30217D0105 | Glass, Slide, Right | 1 | | | | | | | | |
| Door Assembly *L | 30217D0206 | Glass, Slide, Left | 1 | | | | | | | | |
| Door Assembly *L | 30200J2500 | Glass, Slide, Left | | | | 1 | | | | | |
| Door Assembly *L | 30220J2800 | Glass, Slide, Left | | | 1 | | | | | | |
| Door Assembly *R | 30200J2400 | Glass, Slide, Right | | | | 1 | | | | | |
| Door Assembly *R | 30217A0311 | Glass, Slide, Right | | | | 1 | | | | | |
| Door Assembly *R | 30200J2900 | Glass, Slide, Right | | 1 | | | | | | | |
| Door Assembly *L | 30217A0301 | Glass, Slide, Left | | | 1 | | | | | | |
| Door Assembly *L | 30217K0100 | Glass, Slide, Left | 1 | | | | | | | | |
| Door Assembly *M | 30217K0300 | Glass, Slide, Middle | 1 | | | | | | | | |
| Door Assembly *R | 30217K0200 | Glass, Slide, Right | 1 | | | | | | | | |
| Door Assembly | 30217H0101 | Glass, Swing | | | | | | 1 | | | |
| Door Assembly | 30217F0501 | Glass, Swing | | | | | | | 1 | | |
| Door Assembly | 30200A8020 | Glass, Swing | | | | | | | | 1 | |
| Door Assembly | 30217G0301 | Glass, Swing | | | | | | | | 1 | |
| Door Gasket | 30222A1001 | Wiper Style | 1 | 1 | | | | | | | |
| Door Gasket | 30223H0200 | Magnetic | | | | | | 1 | | | |
| Door Gasket | 30223F0200 | Magnetic | | | | | | | 1 | | |
| Door Gasket | 30223A9006 | Magnetic | | | | | | | | 1 | |
| Door Gasket | 30223F0100 | Magnetic | | | | | | | | 1 | |

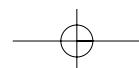




PARTS LIST

| Part Name | Part Number | Description | Model | | | | | | | | |
|---------------------------|-------------|-------------------------|-------|----|----|----|----|----|----|----|---|
| | | | 69 | 48 | 45 | 35 | 33 | 22 | 14 | 11 | 5 |
| Door Glass | 30255K0100 | T24 | 1 | | | | | | | | |
| Door Glass | 30255J1100 | T24 | | | | | 1 | | | | |
| Door Glass | 30255J0200 | T24 | | | 1 | | | | | | |
| Door Glass | 30255D0110 | T24 | | 1 | | | | | | | |
| Door Glass | 30255A0110 | T24 | | | | 1 | | | | | |
| Door Glass | 30255H1100 | T24 | | | | | | 1 | | | |
| Door Glass | 30255F1100 | T24 | | | | | | | 1 | | |
| Door Glass | 30255A9010 | T24 | | | | | | | | 1 | |
| Door Glass | 30255G1100 | T24 | | | | | | | | | 1 |
| Door Handle | 30226A0101 | Slide ABS Plastic Black | 1 | 1 | 1 | 1 | 1 | | | | |
| Door Handle | 30226G0101 | Swing Aluminum | | | | | | 1 | 1 | 1 | |
| Door Handle | 3022600300 | Swing Aluminum | | | | | | | | | 1 |
| Door Hinge Bracket Top | 30229H3000 | Top | | | | | | 1 | 1 | 1 | |
| Door Hinge Bracket Top | 4004D51301 | Top | | | | | | | | | 1 |
| Door Hinge Bracket Bottom | 30229H2100 | Bottom | | | | | | 1 | 1 | 1 | |
| Door Hinge Bracket Bottom | 30200B8703 | Bottom | | | | | | | | | 1 |
| Door Hinge Bushing | 3020700000 | Nylon Top | | | | | | 1 | 1 | 1 | |
| Door Hinge Bushing | 30207H1000 | Nylon Bottom | | | | | | 1 | 1 | 1 | |
| Door Hinge Bushing | 4005B45213 | Nylon Top, Bottom | | | | | | | | | 1 |
| Door Hinge Spring | 30251H0101 | Torsion Style | | | | | | 1 | | | |
| Door Hinge Spring | 30251G0100 | Torsion Style | | | | | | | 1 | 1 | |
| Door Hinge Spring | 30252H1100 | StainlessT1.5 Bottom | | | | | | 1 | 1 | 1 | |
| Door Channel Top | 30287D0103 | PVC-H, Top | 1 | | | | | | | | |
| Door Channel Top | 30287J1100 | PVC-H, Top | | | | | | 1 | | | |
| Door Channel Top | 30287A0306 | PVC-H, Top | | | | | 1 | | | | |
| Door Channel Top | 30287J1200 | PVC-H, Top | | 1 | | | | | | | |
| Door Channel Bottom | 30287D0203 | PVC-H, Bottom | 1 | | | | | | | | |
| Door Channel Bottom | 30287J1500 | PVC-H, Bottom | | | | | | 1 | | | |
| Door Channel Bottom | 30287A0406 | PVC-H, Bottom | | | 1 | | | | | | |
| Door Channel Bottom | 30287J1600 | PVC-H, Bottom | | | 1 | | | | | | |
| Door Channel Left | 30287J0500 | PVC-H, Left | | | 1 | | 1 | | | | |
| Door Channel Left | 30287A0603 | PVC-H, Left | 1 | | 1 | | | | | | |
| Door Channel Right | 30287J0600 | PVC-H, Right | | 1 | | 1 | | | | | |
| Door Channel Right | 30287A0703 | PVC-H, Right | 1 | | 1 | | | | | | |
| Door Channel Top | 30287K0301 | PVC-H, Top | 1 | | | | | | | | |
| Door Channel Bottom | 30287K0401 | PVC-H, Under | 1 | | | | | | | | |



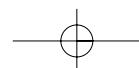


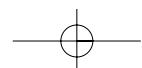
PARTS LIST

| Part Name | Part Number | Description | Model | | | | | | |
|----------------------|-------------|----------------------|-------|----|----|----|----|----|----|
| | | | 69 | 48 | 45 | 35 | 33 | 22 | 14 |
| Door Channel Left | 30287K0500 | PVC-H, Left | 1 | | | | | | |
| Door Channel Right | 30287K0600 | PVC-H, Right | 1 | | | | | | |
| Door Rail | 30287D0300 | Stainless | | 1 | | | | | |
| Door Rail | 30287A0500 | Stainless | | | | 1 | | | |
| Door Rail | 30287J2200 | Stainless | | | | | 1 | | |
| Door Rail | 30287J2100 | Stainless | | | | 1 | | | |
| Door Rail (A) | 30287K0100 | SUS304 | 1 | | | | | | |
| Door Rail (B) | 30287K0200 | SUS304 | 1 | | | | | | |
| Door Roller | 30247A0500 | | | | 1 | 1 | | | |
| Door Roller | 30206A1400 | | | 1 | 1 | | | | |
| Door Roller | 30206D0300 | | | 1 | 1 | | | | |
| Door Roller | 30247K0200 | Tok DU-22-H | 1 | | | | | | |
| Door Sealer Top | 30277D0241 | Top | | 1 | | | | | |
| Door Sealer Top | 30277J0800 | Top | | | | 1 | | | |
| Door Sealer Top | 30277A0231 | Top | | | | 1 | | | |
| Door Sealer Top | 30277J0900 | Top | | | 1 | | | | |
| Door Stopper | 30252H1000 | StainlessT3.0 Bottom | | | | | 1 | | |
| Door Stopper | 30252F0100 | SUS304 T2.0 Bottom | | | | | | 1 | 1 |
| Door Stopper Cushion | 30252K0200 | Rubber Blocks | 1 | | | | | | |
| Door Stopper Cushion | 30252A0200 | Rubber Blocks | | 1 | 1 | | | | |

Evaportaors

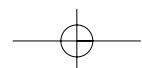
| | | | | | | | | | |
|----------------------|------------|------------------|---|---|---|---|---|---|---|
| Control Box | 30205A9000 | HIPS | | | | | | | 1 |
| Evaporator Drain Pan | 30211A0101 | HIPS | | 1 | 1 | | | | |
| Evaporator Drain Pan | 30211F0101 | HIPS | | | | | | 1 | |
| Evaporator Drain Pan | 4017J54111 | HIPS | | | | | | | 1 |
| Evaporator Drain Pan | 30211K0100 | HIPS | 1 | | | | | | |
| Evaporator Coil | 30200J6200 | FIN TUBE (AL+Cu) | | | 1 | 1 | | | |
| Evaporator Coil | 30270K0100 | FIN TUBE (AL) | 1 | | | | | | |
| Evaporator Coil | 30270A1100 | FIN TUBE(AL+Cu) | | 1 | 1 | | | | |
| Evaporator Coil | 30270H0100 | FIN TUBE(AL) | | | | | 1 | | |
| Evaporator Coil | 30270F0104 | FIN TUBE(AL+Cu) | | | | | | 1 | |
| Evaporator Coil | 30200A8101 | ROLL BOND(AL) | | | | | | | 1 |
| Evaporator Coil | 30270G0100 | AL | | | | | | | 1 |
| Evaporator Fan Motor | 3963329510 | IS-3225 DWSL-1-C | | 2 | 2 | | | | |
| Evaporator Fan Motor | 3963220501 | IS-3220DWSF | | 2 | 2 | | | | |

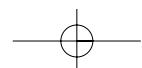




PARTS LIST

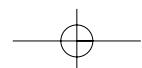
| Part Name | Part Number | Description | Model | | | | | | | | |
|----------------------------|-------------|----------------------------|-------|----|----|----|----|----|----|----|---|
| | | | 69 | 48 | 45 | 35 | 33 | 22 | 14 | 11 | 5 |
| Evaporator Fan Motor | 3963328610 | IS-3210DWSB-2 | | | | | | 2 | | | |
| Evaporator Fan Motor | 3963328110 | IS-4420DWSN-2 | | | | | | | 1 | | |
| Evaporator Fan Motor | 3963328120 | IS-4420DWSN-2A | 2 | | | | | | | | |
| Evaporator Fan Motor | 3963328620 | IS-3210DWSB-3 | | | | | | | 1 | | |
| Evaporator Fan Motor Blade | 30218F0100 | Zytel 150 | | | 2 | 2 | | | | | |
| Evaporator Fan Motor Blade | 4034L38038 | Zytel 158 | | 2 | 2 | | | | | | |
| Evaporator Fan Motor Blade | 3011800400 | ABS 110 | | | | | | 1 | 1 | | |
| Evaporator Fan Motor Blade | 30218F0200 | AL 175 | 2 | | | | | | 1 | | |
| Evaporator Fixture | 30220A9000 | PA-6 | | | | | | | | 1 | |
| Evaporator Fan Motor Guard | 30214H0102 | ABS | | | | | | 1 | | | |
| Evaporator Fan Motor Guard | 30214K0100 | HIPS | 1 | | | | | | | | |
| Lamp Switch | 30281A0600 | 125V/6A | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Thermometer | 30283G0410 | MILJOCO | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Thermostat | 30283K0100 | K55-Q5605(Ranco) | | 1 | | | | | | | |
| Thermostat | 30283K0110 | K55-Q5606(Ranco) | 1 | | | | | | | | |
| Thermostat | 30283D0700 | K55-Q5602(Ranco) | | | 1 | 1 | 1 | 1 | | | |
| Thermostat | 30283D0800 | K61-Q5603(Ranco) | | | | | | | 1 | 1 | |
| Thermostat | 3018301001 | PFN-110U-02D, GNF-110U-02D | | | | | | | | | 1 |
| Thermostat Bracket | 30220A1410 | SPG, Refer Parts Diagram | | | | | | | 1 | 1 | |
| Thermostat Bracket | 30206F1000 | SPG, Refer Parts Diagram | | | | | | | | 1 | |
| Thermostat Bracket | 30220J1000 | SPG, Refer Parts Diagram | 1 | 1 | 1 | 1 | 1 | | | | |
| Thermostat Knob | 30234A1000 | HIPS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Thermostat Knob | 4006D70026 | HIPS OFF1234567 | | | | | | | | | 1 |
| Thermostat Plate | 30242J0100 | EGI+Painting | | | 1 | 1 | | | | | |
| Thermostat Plate | 30206A0200 | EGI+Painting | | 1 | | 1 | | | | | |
| Thermostat Plate | 30206H0104 | EGI+Painting | | | | | | | 1 | | |
| Thermostat Plate | 30242F0802 | HIPS | | | | | | | | 1 | |
| Thermostat Plate | 30245K0100 | EGI 0.6 | 1 | | | | | | | | |
| Grills | | | | | | | | | | | |
| Bottom Grill Assembly | 30200D5500 | Ass'y Front Painted | | 1 | | | | | | | |
| Bottom Grill Assembly | 30200A5500 | Ass'y Front Painted | | | | 1 | | | | | |
| Bottom Grill Assembly | 30224H0100 | Front ABS Dark Gray | | | | | | | 1 | | |
| Bottom Grill Assembly | 30200J2300 | Ass'y Front Painted | | | | | 1 | | | | |
| Bottom Grill Assembly | 30200J4300 | Ass'y Front Painted | 1 | | | | | | | | |

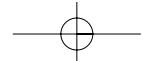




PARTS LIST

| Part Name | Part Number | Description | Model | | | | | | | | |
|-----------------------|-------------|-----------------------|-------|----|----|----|----|----|----|----|---|
| | | | 69 | 48 | 45 | 35 | 33 | 22 | 14 | 11 | 5 |
| Bottom Grill Assembly | 30224F0102 | Front ABS Dark Gray | | | | | | | 1 | 1 | |
| Bottom Grill Assembly | 30224K0100 | Ass'y Grill | 1 | | | | | | | | |
| Lightings | | | | | | | | | | | |
| Ballast | 30285D0500 | 32Watt x 1 R-2P32-TP | 2 | 1 | | | | | | | |
| Ballast | 30285A0700 | 32Watt x 1 R-1P32-TP | | | 1 | 1 | 1 | | | | |
| Ballast | 30200A0110 | 25Watt x 1 R-1P825-TP | | | | 1 | | | | | |
| Ballast | 30285J1200 | 25Watt x 2 R-2P825-TP | | | 1 | | | | | | |
| Ballast | 30285H1500 | 17Watt x 2 R-2P817-TP | | | | | 1 | 1 | | | |
| Ballast | 30200A0140 | 13Watt x 1 DD22B | | | | | | | | | 1 |
| Lamp | 30200D2800 | 32Watt F32T8/TL85048" | 4 | 2 | 1 | 1 | 1 | | | | |
| Lamp | 30236A0500 | 25Watt F25T8/TL95036" | | | 1 | 1 | | | | | |
| Lamp | 30236H0500 | 17Watt F17T8/TL95024" | | | | | 1 | 2 | | | |
| Lamp | 30236F0500 | 13Watt F13T8/CW12" | | | | | | | 2 | 1 | 1 |
| Lamp Shield | 30214F0701 | ACRYL | | | | | | | | | 1 |
| Lamp Shield | 30214A0010 | ACRYL | | | | | | | | | 1 |
| Lamp Holder | 3183005000 | SK-5OD28 | 2 | | 2 | | 2 | 2 | | | |
| Lamp Shield | 30211H0101 | PC, t0.5 | 2 | 1 | 1 | 1 | | | | | |
| Lamp Shield | 30211H0000 | PC, t0.5 | | | | | | | 1 | | |
| Lamp Shield | 30211F0000 | PC, t0.5 | | | | | | | | 1 | |
| Light Starter | 30236A0700 | FS-2 | | | | | | | | | 1 |
| Lamp Switch | 30281A0600 | 125V/6A | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Shelves | | | | | | | | | | | |
| Shelf | 30278D0107 | Wire, White | 6 | | | | | | | | |
| Shelf | 30278A0207 | Wire, White | | | 6 | | | | | | |
| Shelf | 30278K0100 | Wire, White | 9 | | | | | | | | |
| Shelf | 30278H0103 | Wire, White | | | | | | 4 | | | |
| Shelf(A) | 30278F0111 | Wire, White TOP | | | | | | | 3 | | |
| Shelf(B) | 30278F0211 | Wire, White BOTTOM | | | | | | | 1 | | |
| Shelf(T) | 30278A9401 | Wire, White TOP | | | | | | | | 1 | |
| Shelf *L | 30278J0100 | Wire, White | | | | 3 | | | | | |
| Shelf *L | 30278J0300 | Wire, White | | 3 | | | | | | | |
| Shelf *R | 30278J0200 | Wire, White | | | | | 3 | | | | |
| Shelf *R | 30278J0400 | Wire, White | | | 3 | | | | | | |



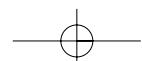


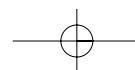
PARTS LIST

| Part Name | Part Number | Description | Model | | | | | | |
|----------------|-------------|-------------------------------|-------|----|----|----|----|----|----|
| | | | 69 | 48 | 45 | 35 | 33 | 22 | 14 |
| Shelf(M) | 30278A9150 | Wire, White MIDDLE | | | | | | | 1 |
| Shelf(B) | 30278A9000 | Wire, White BOTTOM | | | | | | | 1 |
| Shelf(A) | 30278G0111 | Wire, White TOM | | | | | | | 3 |
| Shelf(B) | 30278G0401 | Wire, White BOTTOM | | | | | | | 1 |
| Shelf Bracket | 30220A0200 | Front Center White | 2 | 1 | | 1 | | | |
| Shelf Clip(E) | 30220A0700 | PP TOP | 36 | 24 | 24 | | | | |
| Shelf Clip(D) | 30220A0600 | Nylon BOTTOM | 36 | 24 | 24 | | | | |
| Shelf Standard | 3022000703 | Sides & Back of Cabinet White | 4 | 4 | 4 | | | | |
| Shelf Support | 30253A0500 | Back Center White | 2 | 1 | 1 | | | | |

Sign Frame

| | | | | | | | | | |
|--------------------|------------|---------------|---|---|---|---|---|---|---|
| Sign Frame *T*B | 30222K0900 | PVC-H | 1 | | | | | | |
| Sign Frame *T*B | 30222D0500 | PVC-H | | 1 | | | | | |
| Sign Frame *T*B | 30222A0800 | PVC-H | | | | 1 | | | |
| Sign Frame End | 30222A0900 | PVC-H | 1 | 1 | 1 | | | | |
| Sign Frame *T*B | 30222H0310 | PVC-H | | | | | 1 | | |
| Sign Frame *T*B | 30222F1902 | PVC-H | | | | | | 1 | |
| Sign Frame End | 30222F2103 | ABS Dark Gray | | | | | | 1 | 1 |
| Sign Frame End *L | 30222J0100 | PVC-H | | | 1 | 1 | | | |
| Sign Frame End *R | 30222J0200 | PVC-H | | | 1 | 1 | | | |
| Sign Frame Bracket | 30220A0900 | Aluminum | 1 | 1 | 1 | | | | |
| Sign Panel | 30214D0710 | PC, t1.5 | | 1 | | | | | |
| Sign Panel | 30214A1211 | PC, t1.5 | | | | 1 | | | |
| Sign Panel | 30214H0110 | PC, t3.0 | | | | | | 1 | |
| Sign Panel | 30214F0110 | PC, t3.0 | | | | | | | 1 |
| Sign Panel | 30214J4500 | PC, t1.5 | | | | | 1 | | |
| Sign Panel | 30214J4600 | PC, t1.5 | | | 1 | | | | |
| Sign Panel | 30214K1400 | PC, t1.5 | 1 | | | | | | |

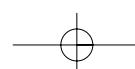


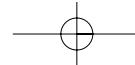


PARTS LIST

| Part Name | Part Number | Description | Model | | | |
|------------------|-------------|-----------------------|-------|------|-------|------|
| | | | 11RV | 14RV | 14CRV | 22RV |
| Lightings | | | | | | |
| Ballast | 30200F7300 | 25Watt x R-1P825TP | 1 | 1 | | |
| Ballast | 30200G7300 | 25Watt x R-1P825TP | 1 | | | |
| Ballast | 30200A0141 | 13Watt x 1DD22B | | 1 | 1 | |
| Ballast | 30200H7400 | 17Watt x R-1P817-TP | | | | 1 |
| Ballast | 30200H7300 | 32Watt x R-1P32-TP | | | | 1 |
| Lamp | 30236A0500 | 25Watt F25T8/TL95036" | 1 | 1 | 1 | |
| Lamp | 30236F0500 | 13Watt F13T8' CW12" | | 1 | 1 | |
| Lamp | 30236H0500 | 17Watt F17T8/TL95024" | | | | 1 |
| Lamp | 30200D0500 | 32Watt F32TB/TL85048" | | | | 1 |
| Lamp Shield | 30211K0200 | PC, T0.5 | | | | 1 |
| Lamp Shield | 30211F0400 | PC, T0.5 | 1 | 1 | 1 | |
| Shelves | | | | | | |
| Shelf(A) | 30278G0700 | Wire, White, Top | 3 | | | |
| Shelf(B) | 30278G0401 | Wire, White, Bottom | 1 | | | |
| Shelf(A) | 30278F0300 | Wire, White, Top | | 3 | 3 | |
| Shelf(B) | 30278F0211 | Wire, White, Bottom | | 1 | 1 | |
| Shelf | 30278H0400 | Wire, White | | | | 4 |

** Other parts are the same parts as TGM-11R, TGM-14R, TGM-22R





8. REPLACEMENT OF MAIN COMPONENTS

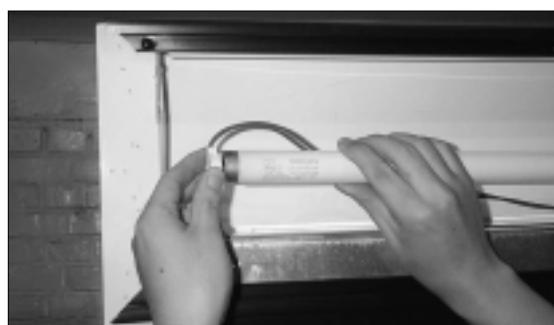
1. LAMP FOR ADVERTISING PANEL(TGM-69R, 48R, 45R, 35R, 33R)



1. Separate the Sign Frame End.



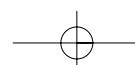
2. Separate the Sign Panel.



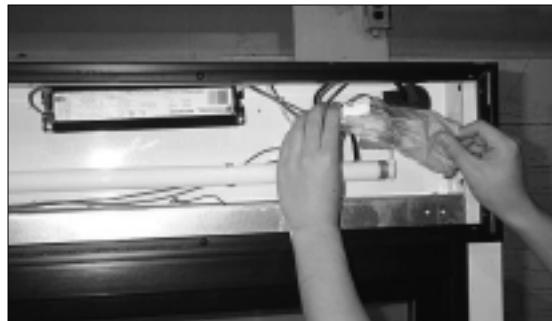
3. Separate the Lamp Socket.



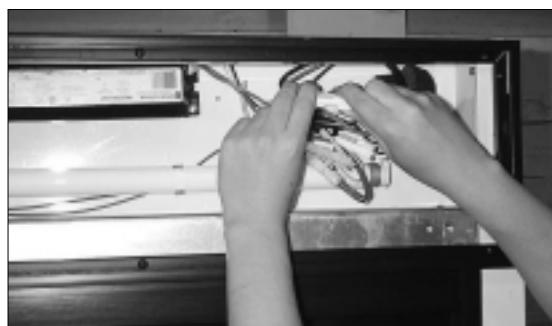
4. Separate the Lamp out of the Lamp Holder and replace it.



REPLACEMENT OF MAIN COMPONENTS



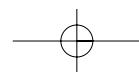
5. Take out the Clamp securing wires.



6. Separate the Ballast Connectors.



7. Unscrew two screws securing the Ballast and replace it.

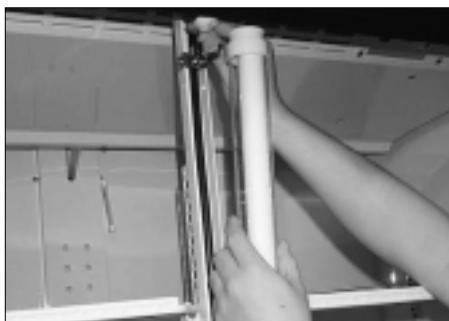


REPLACEMENT OF MAIN COMPONENTS

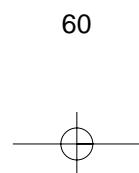
1. LAMP FOR CABINET LINER(TGM-69R, 48R, 45R, 35R, 33R)

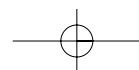


1. Take out the Doors and separate the Lamp from the Lamp Holder.



2. Separate the Lamp Socket.





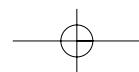
REPLACEMENT OF MAIN COMPONENTS

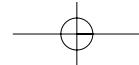


3. Separate the Lamp Shield End Cap.



4. Replace the Lamp.





REPLACEMENT OF MAIN COMPONENTS

1. LAMP(TGM-22R,14R)



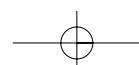
1. Unscrew four screws securing the Sign Frame End and separate the Sign Frame End.

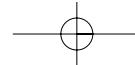


2. Separate the Sign Panel.



3. Separate the Lamp Sockets and replace the Lamp.





REPLACEMENT OF MAIN COMPONENTS



4. Separate connector of the ballast.



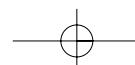
5. Unscrew two screws securing the Ballast.

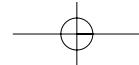


6. Separate the Lamp Sockets to replace the Lamp for Cabinet Liner.



7. Separate the Lamp Shield End Cap and replace the Lamp.





REPLACEMENT OF MAIN COMPONENTS

1. LAMP BASE ASSEMBLY FOR VERTICAL LAMP SERIES



TGM-11RV

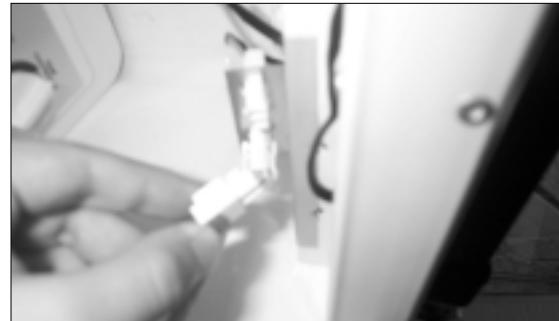


TGM-14RV, TGM-22RV

1. UNSCREW THE SCREWS OF THE HOUSING COVER

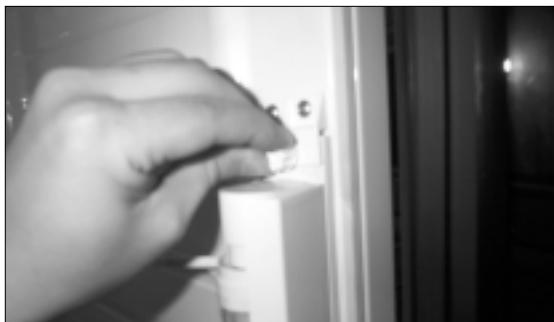


TGM-11RV



TGM-14RV, TGM-22RV

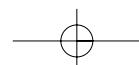
2. PULL OUT THE HOUSING

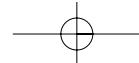


3. UNSCREW THE SPECIAL BOLT THAT IS FIXING THE LAMP BASE ASSEMBLY (3POINTS)



4. PULL OUT THE LAMP BASE ASSEMBLY





REPLACEMENT OF MAIN COMPONENTS



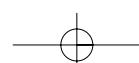
5. SEPARATE THE FLUORESCENT LAMP FROM THE LAMP HOLDER

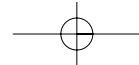


6. PULL OUT THE LAMP CAP FROM THE LAMP CASE



7. REPLACE THE FLUORESCENT LAMP AFTER PULL OUT THE FLUORESCENT LAMP FROM THE LAMP CASE.





REPLACEMENT OF MAIN COMPONENTS

1. LAMP(TGM-11R,5R)



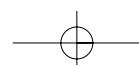
1. Unscrew two screws securing the Lamp Shield.

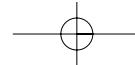


2. Disassemble the Lamp Shield.



3. Separate the Lamp out of the Lamp Holder and replace it.



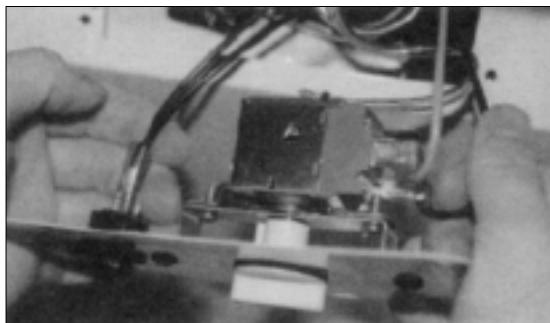


REPLACEMENT OF MAIN COMPONENTS

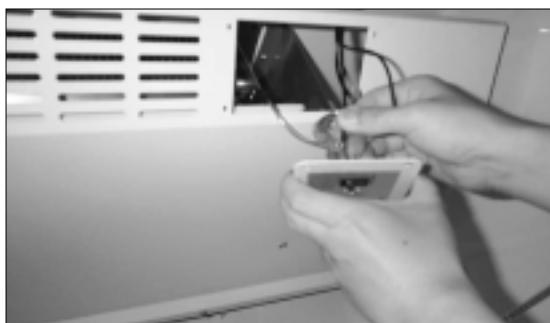
2. TEMPERATURE CONTROL AND LIGHT SWITCH(TGM-69R, 48R, 45R, 35R, 33R)



1. Unscrew four screws securing the Thermostat control plate.



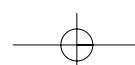
2. Pull out the Thermostat control plate.

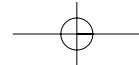


3. Separate the Receptacles out of the Thermostat and Lamp Switch.



4. Separate the Tube of Thermostat from the Evaporator.





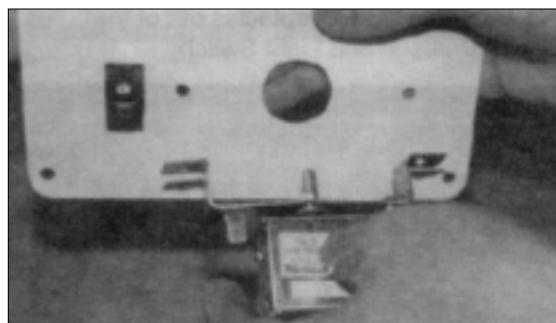
REPLACEMENT OF MAIN COMPONENTS



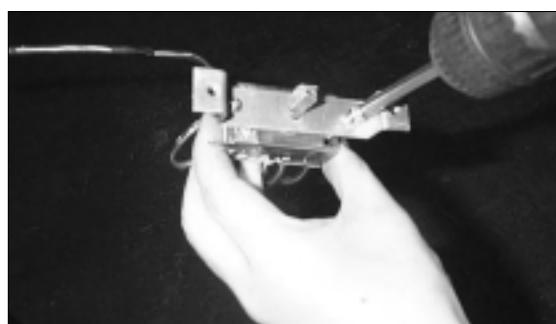
5. Separate the Thermostat Knob out of the Thermostat.



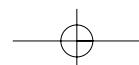
6. Unscrew two screws securing the Thermostat.

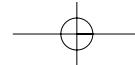


7. Separate the Thermostat out of the Thermostat plate.



8. Unscrew two screws securing the Thermostat out of the Thermostat Bracket.





REPLACEMENT OF MAIN COMPONENTS

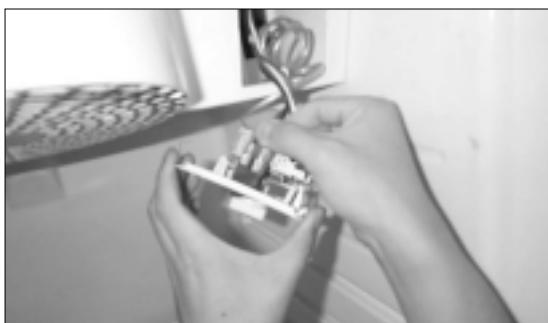
2. THERMOSTAT CONTROL AND LIGHT SWITCH (TGM-14R, 14RV)



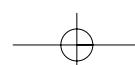
1. Unscrew two screws securing the Thermostat Plate.

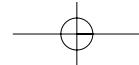


2. Pull out the Thermostat Plate.

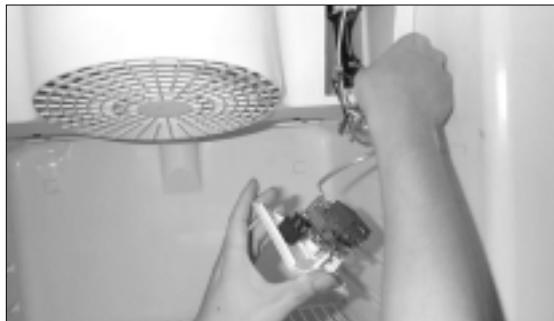


3. Separate the Receptacles out of the Thermostat and Light Switch.





REPLACEMENT OF MAIN COMPONENTS



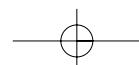
4. Separate the Tube of Thermostat from the Evaporator.

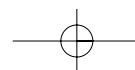


5. Separate the Thermostat out of the Thermostat Plate.



6. Unscrew two screws securing the Thermostat out of the Thermostat Bracket.





REPLACEMENT OF MAIN COMPONENTS

2. THEMPERATURE CONTROL AND LIGHT SWITCH(TGM-11R, 11RV)



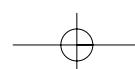
1. Unscrew six screws securing the Duct.

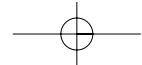


2. Unscrew four screws securing the Thermostat Plate.

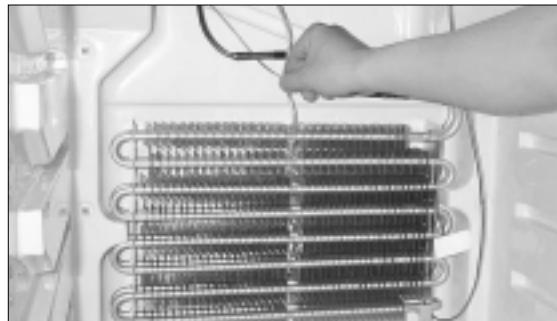


3. Separate the Receptacles out of the Thermostat and Lamp Switch.

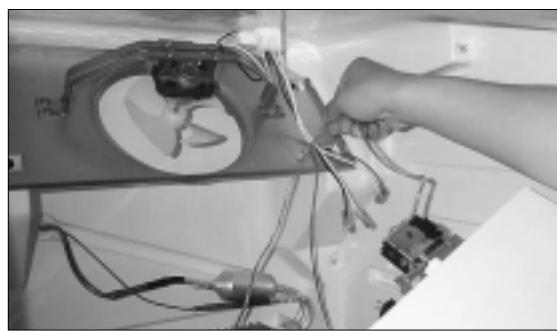




REPLACEMENT OF MAIN COMPONENTS



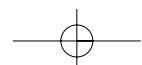
4. Separate the Tube of Thermostat from the Evaporator Coil.

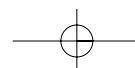


5. Pull out the Thermostat plate.



6. Separate the Thermostat out of the Thermostat plate.





REPLACEMENT OF MAIN COMPONENTS

2. THEMPERTURE CONTROL AND LIGHT SWITCH(TGM-5R)



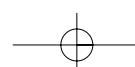
1. Unscrew two screws securing the Control Box.

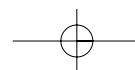


2. Separate the Connectors.



3. Unscrew two screws securing the Tube of Thermostat out of the Thermostat Fixture.





REPLACEMENT OF MAIN COMPONENTS

3. EVAPORATOR FAN MOTOR & BLADE(TGM-69R, 48R, 45R, 35R, 33R)



1. Unscrew four screws securing the Thermostat Plate.



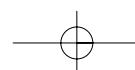
2. Unscrew eight screws securing the Duct.

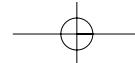


3. Separate the Duct.



4. Unscrew four screws securing the Evaporator Drain Pan.





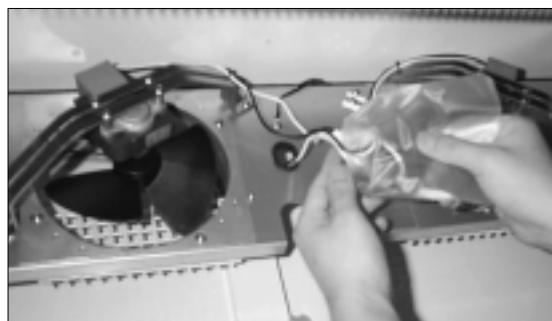
REPLACEMENT OF MAIN COMPONENTS



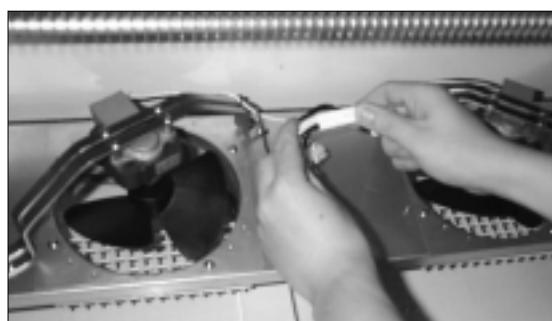
5. Separate the Evaporator Drain Pan.



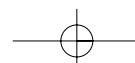
6. Unscrew four screws securing the Evaporator Guide *L, *R and separate them.

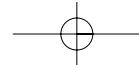


7. Separate the Vinyl Cover securing the Evaporator Fan Motor.

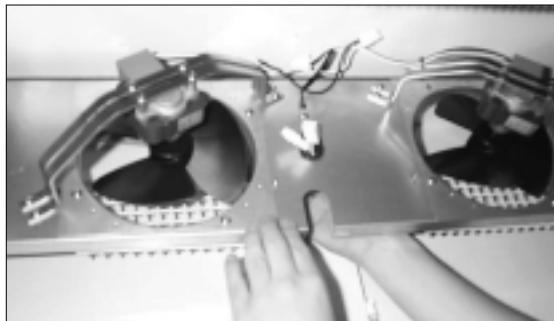


8. Separate the Connectors of Evaporator Fan Motor.

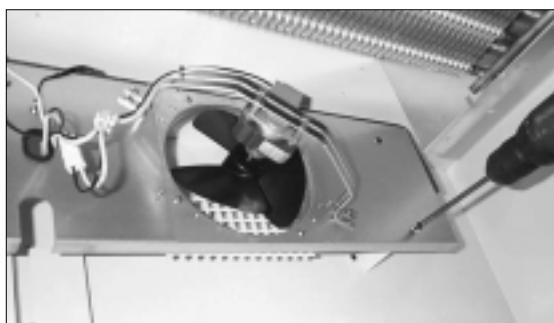




REPLACEMENT OF MAIN COMPONENTS



9. Pull out of the Evaporator Fan Motor Harness.



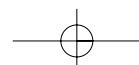
10. Unscrew two screws securing the Evaporator Fan Motor Bracket.

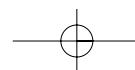


11. Separate the Evaporator Fan Motor Bracket.



12. Unscrew four screws securing the Evaporator Fan Motor out of the Bracket.





REPLACEMENT OF MAIN COMPONENTS

3. EVAPORATOR FAN MOTOR & BLADE(TGM-22R, 22RV)



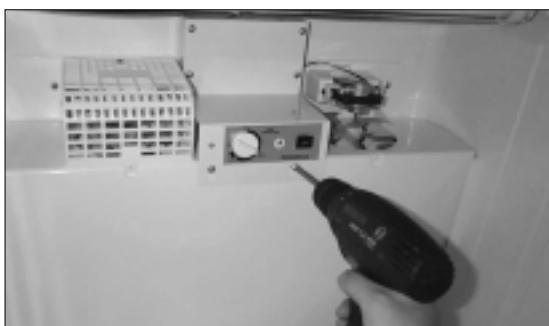
1. Unscrew the screw securing the Evaporator Fan Motor Guard.



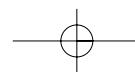
2. Separate the Evaporator Fan Motor Cover.

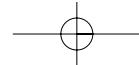


3. Replace the Evaporator Fan Motor.

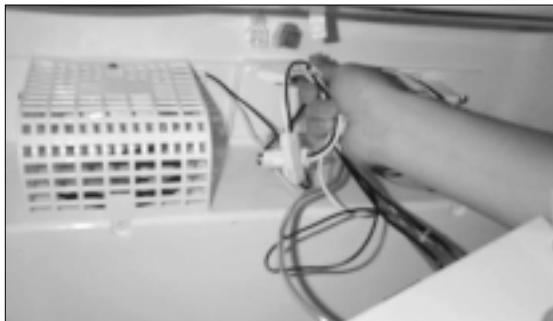


4. Unscrew four screws securing the Thermostat Plate.





REPLACEMENT OF MAIN COMPONENTS



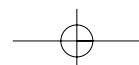
5. Separate the Thermostat Plate.
Pull out the tube of Thermostat out of the Evaporator Coil.

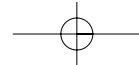


6. Unscrew four screws securing the Duct.



7. Separate the Duct.





REPLACEMENT OF MAIN COMPONENTS

3. EVAPORATOR FAN MOTOR & BLADE(TGM-14R, 14RV)



1. Unscrew the screws securing the Thermostat Plate and two screws securing the Duct.



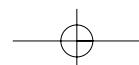
2. Separate the Duct.
(Caution: Pulling the Duct in to the front can cause the Fan Blade to be bent.)

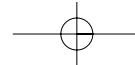


3. Unscrew four securing the Evaporator Fan Motor Bracket.



4. Separate the Connectors of Fan Motor, the Nut and replace the Fan Blade.

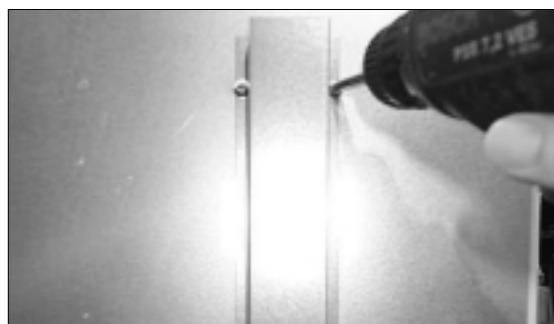




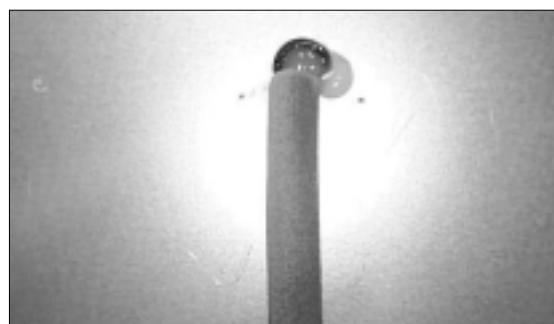
REPLACEMENT OF MAIN COMPONENTS



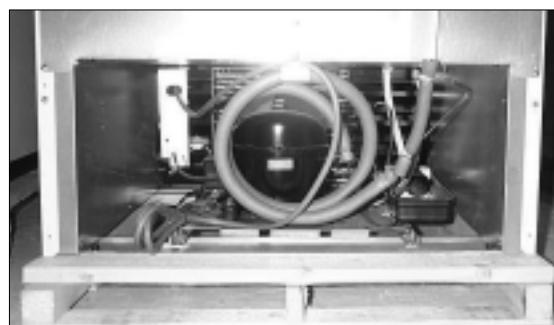
5. Unscrew two screws securing the Evaporator in case of replacing it.



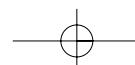
6. Separate Suction Pipe Cover on the Rear Cabinet.

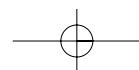


7. Separate the Sealing Tube.



8. Replace the Suction Pipe with welding machine.





REPLACEMENT OF MAIN COMPONENTS

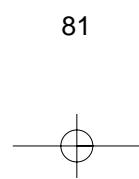


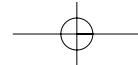
9. Pull out the Evaporator Coil.

(**Caution:** Pulling the Evaporator can cause
the Cabinet Liner to be scratched.)



10. Separate the Evaporator Coil out of the
Evaporator Drain Pan and repair the
Evaporator Coil.





REPLACEMENT OF MAIN COMPONENTS

3. EVAPORATOR FAN MOTOR & BLADE(TGM-11R, 11RV)



1. Unscrew the screws securing the Duct.



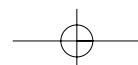
2. Unscrew the screws securing the Thermostat Plate.

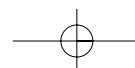


3. Separate the harness out of the Thermostat and Lamp Switch.



4. Separate the Evaporator Fan Motor Bracket.





REPLACEMENT OF MAIN COMPONENTS

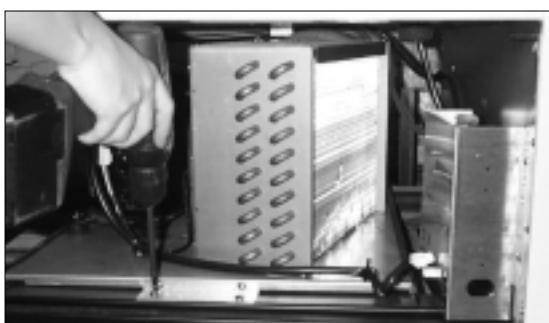
4. CONDENSER FAN MOTOR & BLADE(TGM-69R, 48R, 45R, 35R, 33R)



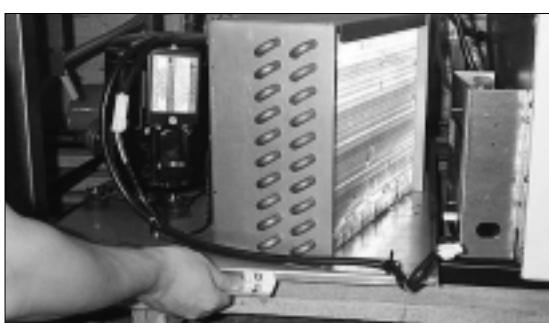
1. Unscrew four screws securing the Bottom Grill.



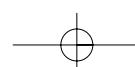
2. Separate the Compressor Harness out of the Switch Box.

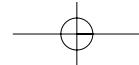


3. Unscrew four screws securing the Compressor Base.



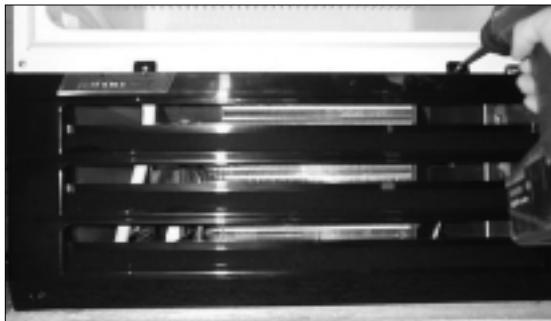
4. Pull the Compressor Base and separate the Condenser Fan Motor.



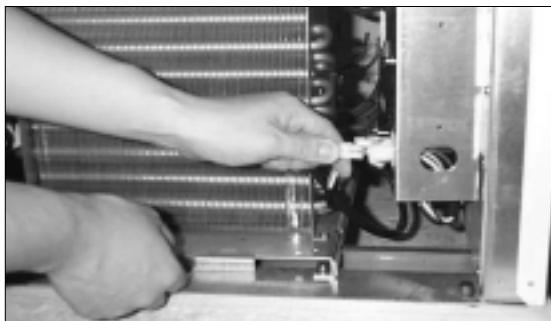


REPLACEMENT OF MAIN COMPONENTS

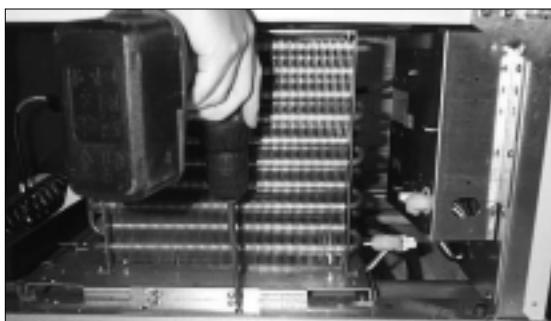
4. CONDENSER FAN MOTOR & BLADE(TGM-22R, 22RV)



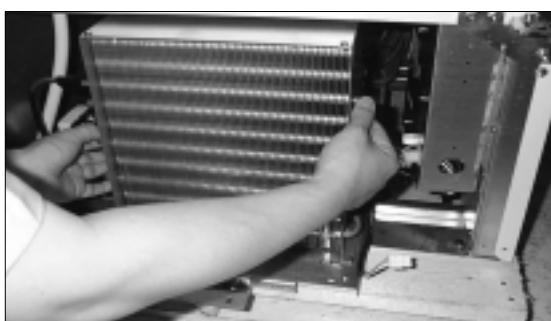
1. Unscrew four screws securing the Bottom Grill.



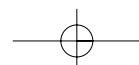
2. Separate the Connector out of the Switch Box.

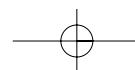


3. Unscrew four screws securing the Compressor Base.



4. Pull the Compressor Base and separate the Condenser Fan Motor.



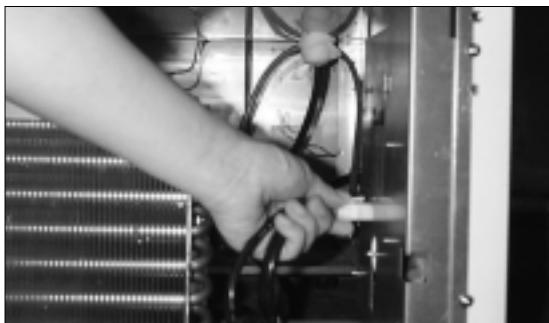


REPLACEMENT OF MAIN COMPONENTS

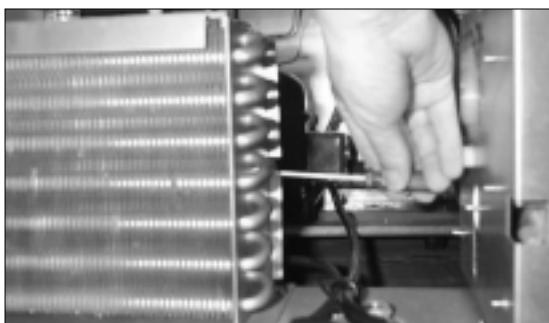
4. CONDENSER FAN MOTOR & BLADE(TGM-14R, 14RV, 11R, 11RV)



1. Unscrew four screws securing the Bottom Grill.



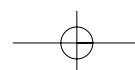
2. Separate the Connector out of the Switch Box.

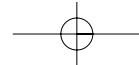


3. Unscrew four screws securing the Condenser Fan Motor Bracket.



4. Pull the Condenser Fan Motor with care.

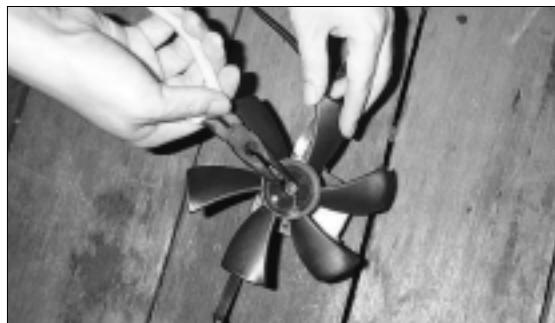




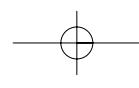
REPLACEMENT OF MAIN COMPONENTS

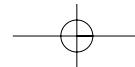


5. Separate the Fan Motor Bracket.



6. Separate the nut and replace the Fan Blade.





REPLACEMENT OF MAIN COMPONENTS

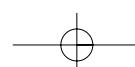
5. DOOR(TGM-22R, 22RV, 14R, 14RV)

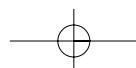


1. Separate the Sign Frame End and Sign Panel.



2. Separate the Door Hinge Top and Door.

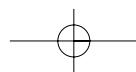


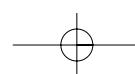


REFRIGERATOR MANUFACTURER
Turbo air

**Commercial
Freezer
Service Manual**

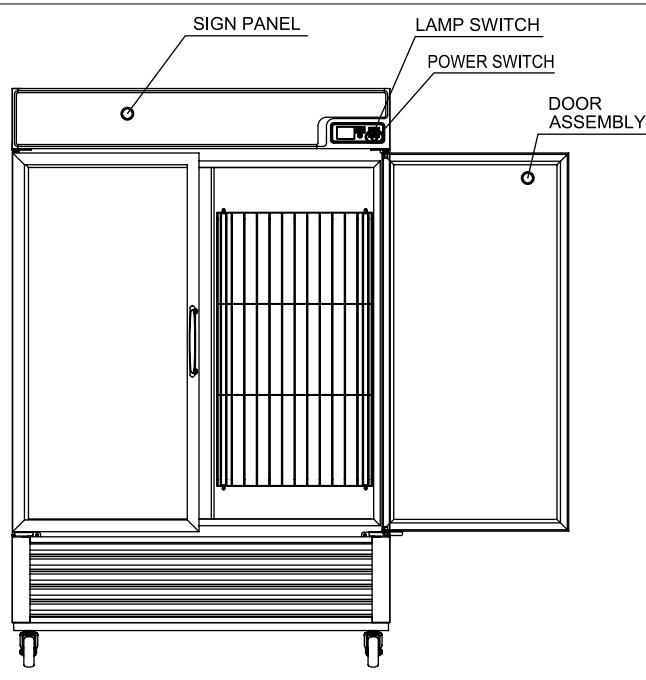
**Model No.: TGF-49F
TGF-23F
TGF-13F
TGF-9F**





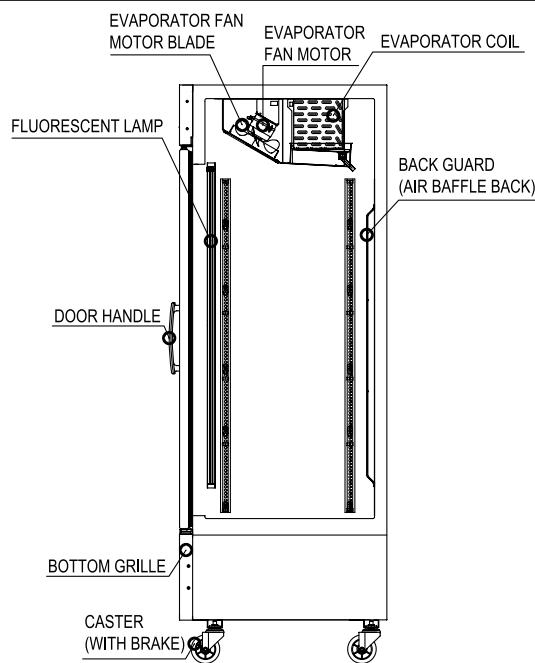
1. FEATURE CHART

• Model : TGF-49F

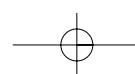


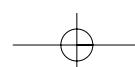
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• Model : TGF-49F



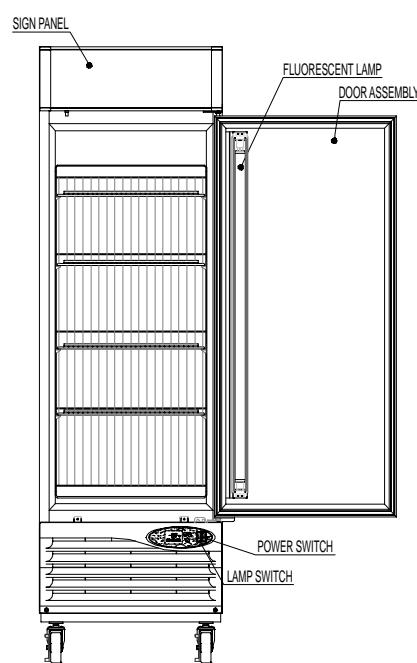
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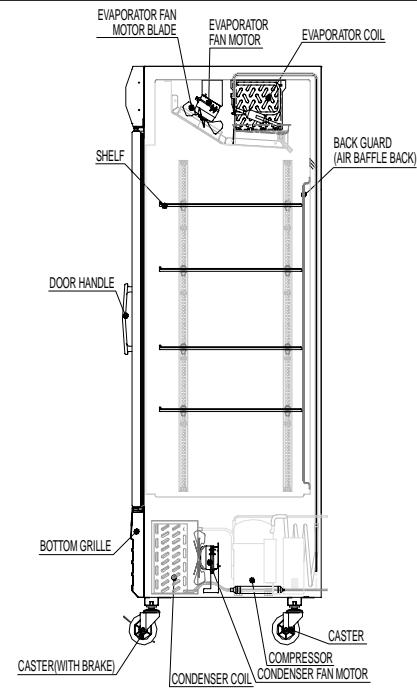
FEATURE CHART

• Model : TGF-23F

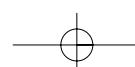


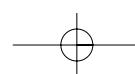
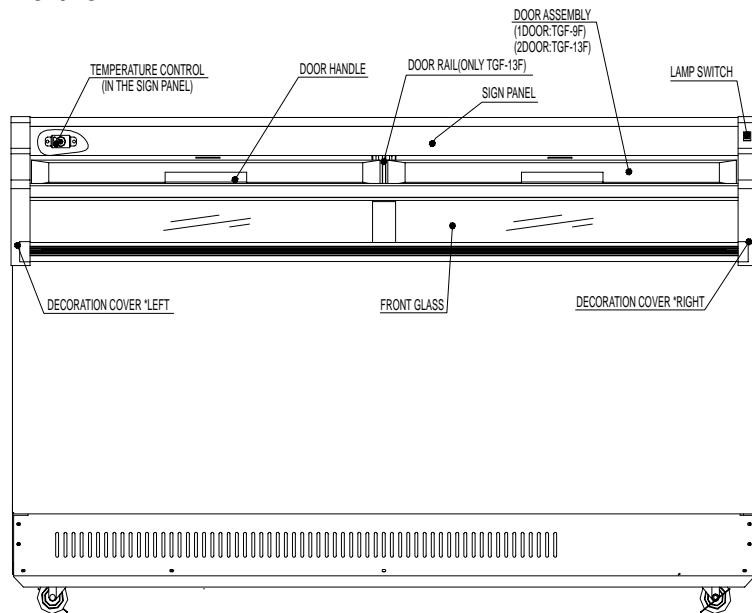
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• Model : TGF-23F

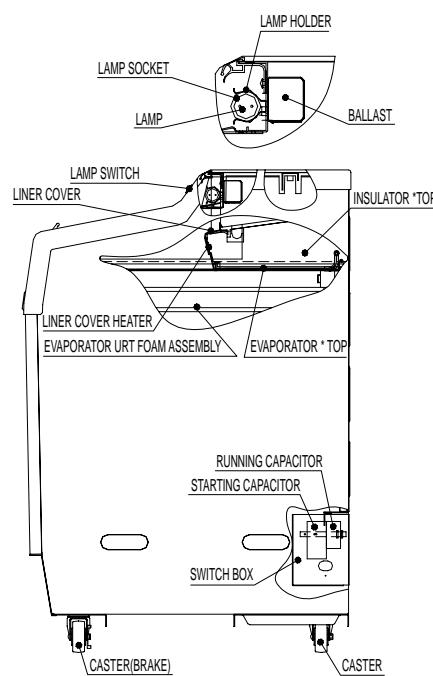


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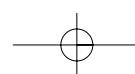


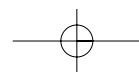
**FEATURE CHART****• Model : TGF-9F/13F**

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• Model : TGF-9F/13F

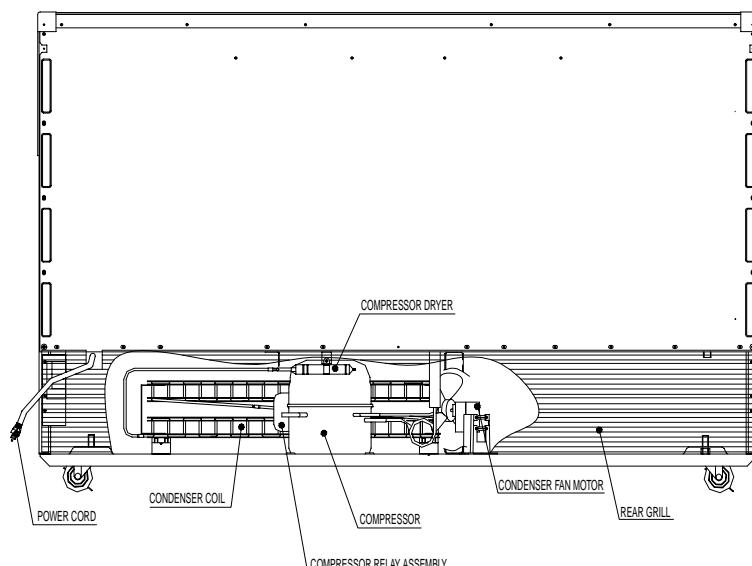
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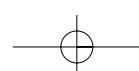


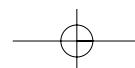
FEATURE CHART

• Model : TGF-9F/13F



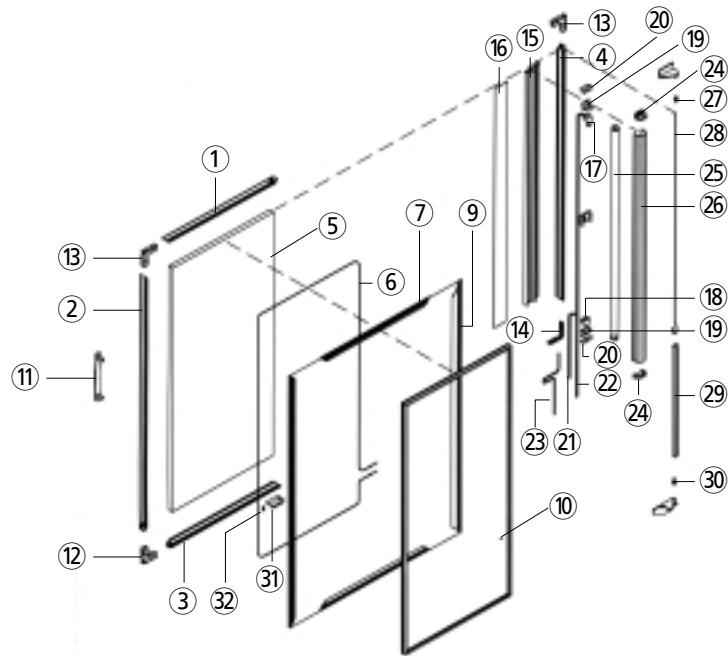
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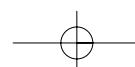


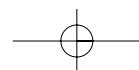
2. PARTS DETAILS

DOOR PARTS : TGF-23F



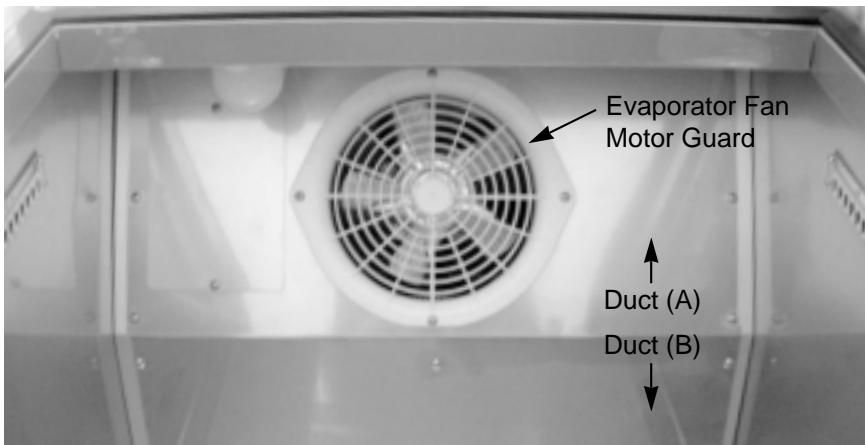
| | | | |
|-----------|--------------------------------------|-----------|---------------------------------|
| 1 | DOOR FRAME *TOP | 18 | LAMP SOCKET (WITHOUT SPRING) |
| 2 | DOOR FRAME *LEFT | 19 | LAMP SOCKET BRACKET |
| 3 | DOOR FRAME *BOTTOM | 20 | LAMP SHIELD FIXTURE |
| 4 | DOOR FRAME *RIGHT | 21 | LAMP SOCKET HARNESS-A |
| 5 | DOOR GLASS | 22 | LAMP SOCKET HARNESS-B |
| 6 | DOOR FRAME HEATER | 23 | DOOR HEATER HARNESS |
| 7 | AUXILIARY DOOR FRAME *TOP *BOTTOM | 24 | LAMP SHIELD CAP |
| 8 | AUXILIARY DOOR FRAME *LEFT *RIGHT | 25 | LAMP |
| 9 | AUXILIARY DOOR FRAME -A | 26 | LAMP SHIELD |
| 10 | DOOR GASKET | 27 | DOOR BUSHING *TOP |
| 11 | DOOR HANDLE | 28 | BAR SPRING |
| 12 | DOOR FRAME FIXTURE-A | 29 | BAR SPRING FIXTURE |
| 13 | DOOR FRAME FIXTURE-B | 30 | DOOR BUSHING *BOTTOM |
| 14 | DOOR FRAME FIXTURE-D | 31 | DOOR STOPPER-A |
| 15 | LAMP MOUNTING BASE | 32 | CORD BUSHING |
| 16 | DOOR SIGN PANEL | | |
| 17 | LAMP SOCKET (WITH SPRING) | | |



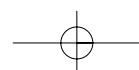
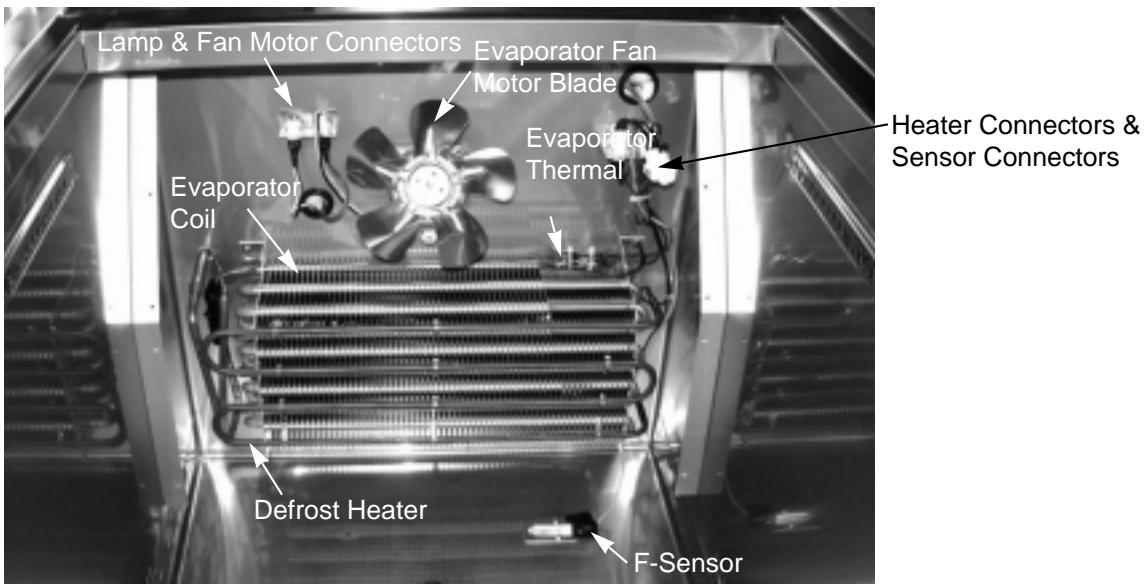


PART DETAILS

Duct (TGF-23F)

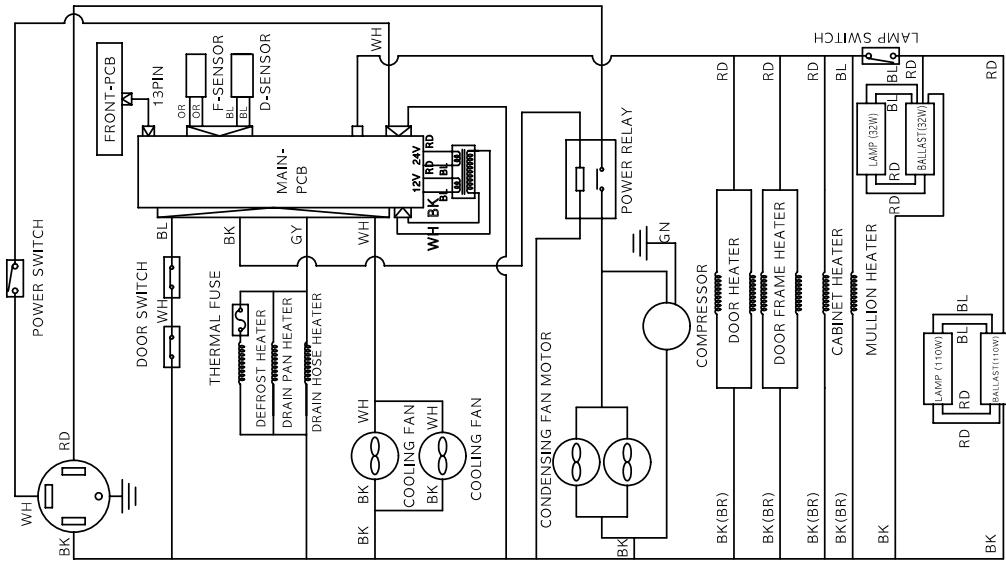


Evaporator, Fan (TGF-23F)

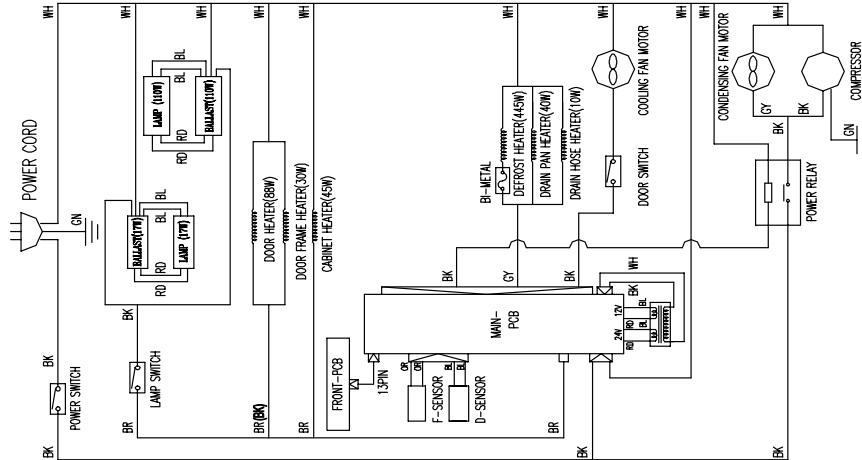


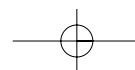
3. WIRING DIAGRAM

• Model : TGF-49F



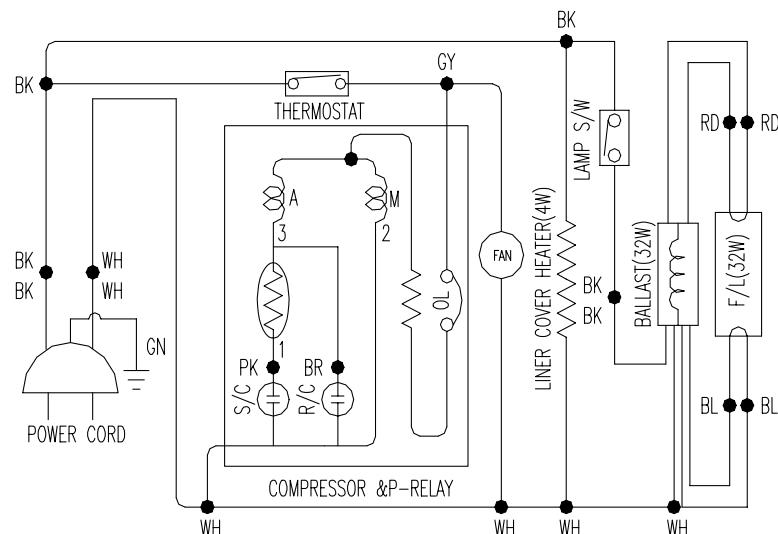
• Model : TGF-23F



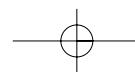
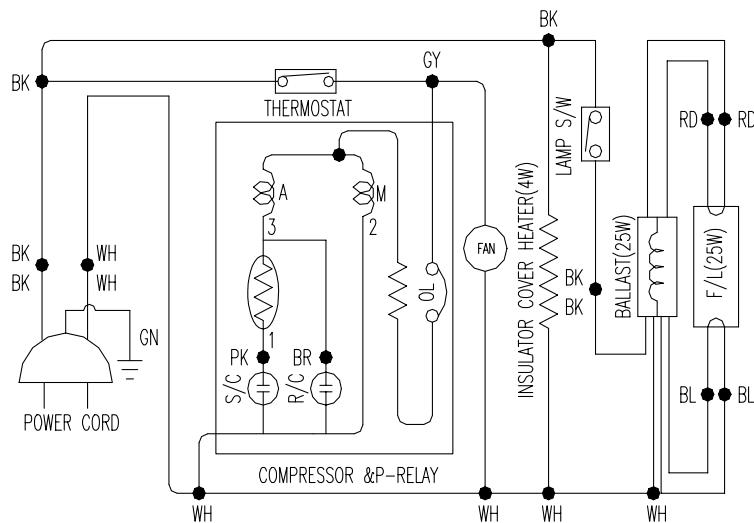


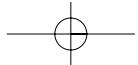
WIRING DIAGRAM

• Model : TGF-13F



• Model : TGF-9F





4. SPECIFICATION OF MAIN COMPONENTS

1. COMPRESSOR

| MODEL | PART NAME | PART NO. | HORSE POWER | CAPACITY | TYPE OF MOTOR | INPUT | MAKER |
|---------|-----------|------------|-------------|-------------------------------|---------------|--------|----------------------|
| TGF-49F | CAJ2464Z | 30200R1900 | 3/2 HP | 6,452 BTU/h (1,626 Kcal/h) | CSR | 1,232W | TECUMSEH (FRANCE) |
| TGF-23F | CAJ2432Z | 30200R1000 | 2/3 HP | 3,200 BTU/h (807 Kcal/h) | CSR | 810W | TECUMSEH (FRANCE) |
| TGF-13F | AEZ2415Z | 30200N4400 | 1/3 HP | 1,459 BTU/h (368 Kcal/h) | CSIR | 280W | TECUMSEH (FRANCE) |
| TGF-9F | HBL27YE-1 | 3952127G10 | 1/4 HP | 896 BTU/h (226 Kcal/h) | CSR | 220W | DAEWOO |

2. COMPRESSOR RELAY, OVERLOAD

| MODEL | RELAY | PART NO. | OVERLOAD | PART No. | MAKER | NOTE |
|---------|----------------|------------|------------|------------|------------------|------------------|
| TGF-49F | 3ARR3*3A* | - | GA3SJU81 | - | TECUMSEH(FRANCE) | Comp. Assembly |
| TGF-23F | 3ARR3*5R* | - | CST00AGF | - | TECUMSEH(FRANCE) | Comp. Assembly |
| TGF-13F | 3ARR12KP(+479) | - | MRP24AIK | - | TECUMSEH(FRANCE) | Comp. Assembly |
| TGF-9F | PTC 068 | 3017906900 | 4TM-783SHB | 3817910600 | DAEWOO | TEXAS INSTRUMENT |

3. COMPRESSOR CAPACITOR

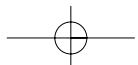
| MODEL | STARTING | PART No. | RUNNING | PART No. | MAKER | Note |
|---------|------------|------------|-----------|------------|------------------|----------------|
| TGF-49F | 330V 125μF | - | 400V 20μF | - | TECUMSEH(FRANCE) | Comp. Assembly |
| TGF-23F | 160V 315μF | - | 400V 30μF | - | TECUMSEH(FRANCE) | Comp. Assembly |
| TGF-13F | 160V 250μF | - | - | - | TECUMSEH(FRANCE) | Comp. Assembly |
| TGF-9F | 220V 100μF | 401RD35050 | 230V 10μF | 400EL15130 | DAEWOO | DAEWOO |

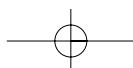
4. CONDENSER FAN MOTOR

| MODEL | PART NAME | PART NO. | POLE | INPUT | TYPE | BLADE (NUMBER) | MAKER |
|---------|---------------|------------|------|-------|-----------------------|----------------|----------|
| TGF-49F | IS-4420DWSQ-1 | 3963322020 | 4P | 43W | Shaded Pole Induction | AL (5) | SUNGSHIN |
| TGF-23F | IS-4420DWSG-1 | 3963320410 | 4P | 47W | Shaded Pole Induction | AL (5) | SUNGSHIN |
| TGF-13F | IS-3225DWSK-1 | 3963326010 | 2P | 36W | Shaded Pole Induction | Zytel (6) | SUNGSHIN |
| TGF-9F | | | | | | | |

5. EVAPORATER FAN MOTOR

| MODEL | PART NAME | PART NO. | POLE | INPUT | TYPE | BLADE (NUMBER) | MAKER |
|---------|----------------|------------|------|-------|-----------------------|----------------|----------|
| TGF-49F | IS-4420DWSN-2A | 3963328120 | 4P | 47W | Shaded Pole Induction | AL (5) | SUNGSHIN |
| TGF-23F | IS-4420DWSN-2A | 3963328120 | 4P | 47W | Shaded Pole Induction | AL (5) | SUNGSHIN |





SPECIFICATION OF MAIN COMPONENTS

6. TEMPERATURE CONTROL

| MODEL | PART NAME | PART NO. | TYPE | MAKER |
|---------|-----------|------------|--------|---------|
| TGF-13F | | | | |
| TGF-9F | GNF-107DC | 30283D0700 | NORMAL | SHINHAN |

7. EVAPORATER DEFROST HEATER

| MODEL | PART NAME | PART No. | Spec. | MAKER |
|---------|-----------------|------------|-------|--------|
| TGF-49F | SHEATHED HEATER | 30228L0700 | 600W | SANGDO |
| TGF-23F | SHEATHED HEATER | 30228L0802 | 445W | SANGDO |

8. BALLAST

| MODEL | PART NAME | PART NO. | QTY | WATT | CURRENT | TYPE |
|---------|--------------|------------|-----|------|---------|-------|
| | MAGNETEK | | | | | |
| TGF-49F | 949-LH-TC-P | 30200R3102 | 1 | 110W | 1.7A | Rapid |
| | B232I120RH-A | 30200R4300 | 1 | 32W | 0.32A | Rapid |
| TGF-23F | 703-L-TC-P | 30285R1200 | 1 | 17W | 0.21A | Rapid |
| | 949-LH-TC-P | 30285R1300 | 1 | 110W | 1.7A | Rapid |
| TGF-13F | M-132R120C | 30200A0120 | 1 | 32W | 0.32A | Rapid |
| TGF-9F | 727-L-TC-P | 30200A0131 | 1 | 25W | 0.3A | Rapid |

9. FLUORESCENT LAMP

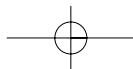
| MODEL | PART NAME | PART No. | NUMBER | WATT | LENGTH | DESCRIPTION | BULB | MAKER |
|---------|----------------|------------|--------|------|--------|--------------|------|---------------|
| TGF-49F | F32T8/TL860 | 30236D0511 | 1 | 32W | 48" | TL80, 5000K | T8 | PHILIPS |
| | F48T12/CW/1500 | 30236R1100 | 1 | 110W | 48" | CW, 4100K | T12 | PHILIPS or GE |
| TGF-23F | F17T8/TL950 | 30236H0500 | 1 | 17W | 12" | TL950, 5000K | T8 | PHILIPS or GE |
| | F48T12/CW/VHO | 30236R1000 | 1 | 110W | 48" | CW, 4100K | T12 | PHILIPS or GE |
| TGF-13F | F32T8/TL950 | 30200D2800 | 1 | 32W | 48" | TL80, 5000K | T8 | PHILIPS |
| TGF-9F | F25T8/SP41 | 30236A0500 | 1 | 25W | 36" | TL80, 5000K | T8 | GE |

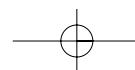
10. ROCKER SWITCH

| MODEL | TYPE | PART NO. | RATING | MAKER |
|---------|---------------------|------------|----------|------------|
| TGF-49F | POWER SWITCH (RED) | 30281R0200 | 125V/20A | SIGNAL LUX |
| TGF-23F | LAMP SWITCH (GREEN) | 30281R0100 | 125V/20A | SIGNAL LUX |
| TGF-13F | | | | |
| TGF-9F | LAMP SWITCH | 30281A0600 | 125V, 6A | DAESUNG |

11. TRANSFORMER & MAIN PCB

| MODEL | TYPE | PART NO. | RATING | NOTE |
|---------|-------------|------------|-----------|----------|
| TGF-49F | TRANSFORMER | 30284L0100 | 115V/60Hz | DWS-115U |
| | MAIN PCB | 30243R0200 | 115V/60Hz | 2GF1151 |
| TGF-23F | TRANSFORMER | 30284L0100 | 115V/60Hz | DWS-115U |
| | MAIN PCB | 30243R0100 | 115V/60Hz | 1GF1151 |

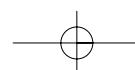
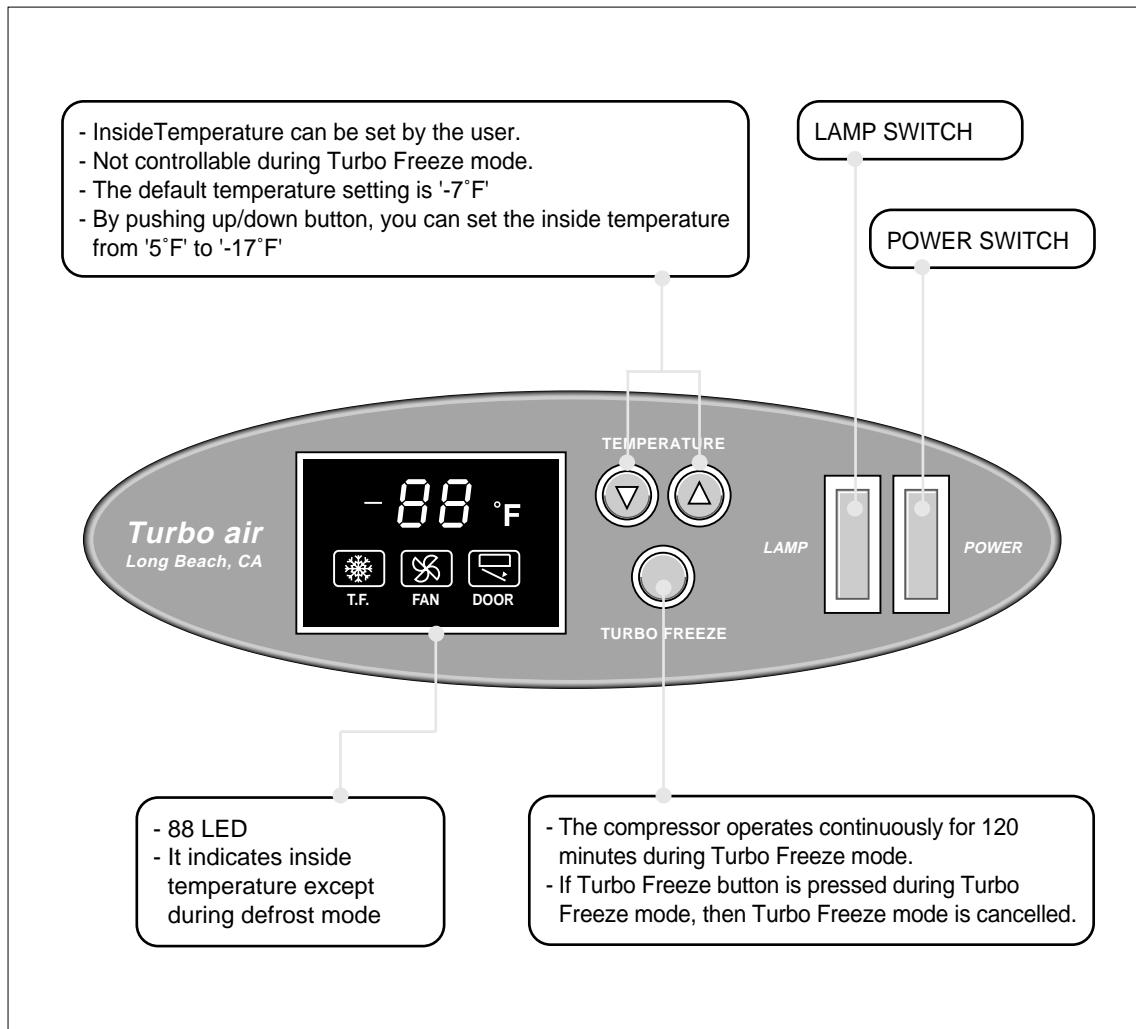


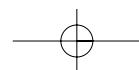


5. ELECTRONIC CONTROLLER INSTRUCTION

Section 5 is for TGF-23F/49F

5-1-1. HOW TO USE THE DISPLAY PANEL(TGF-23F)

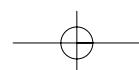
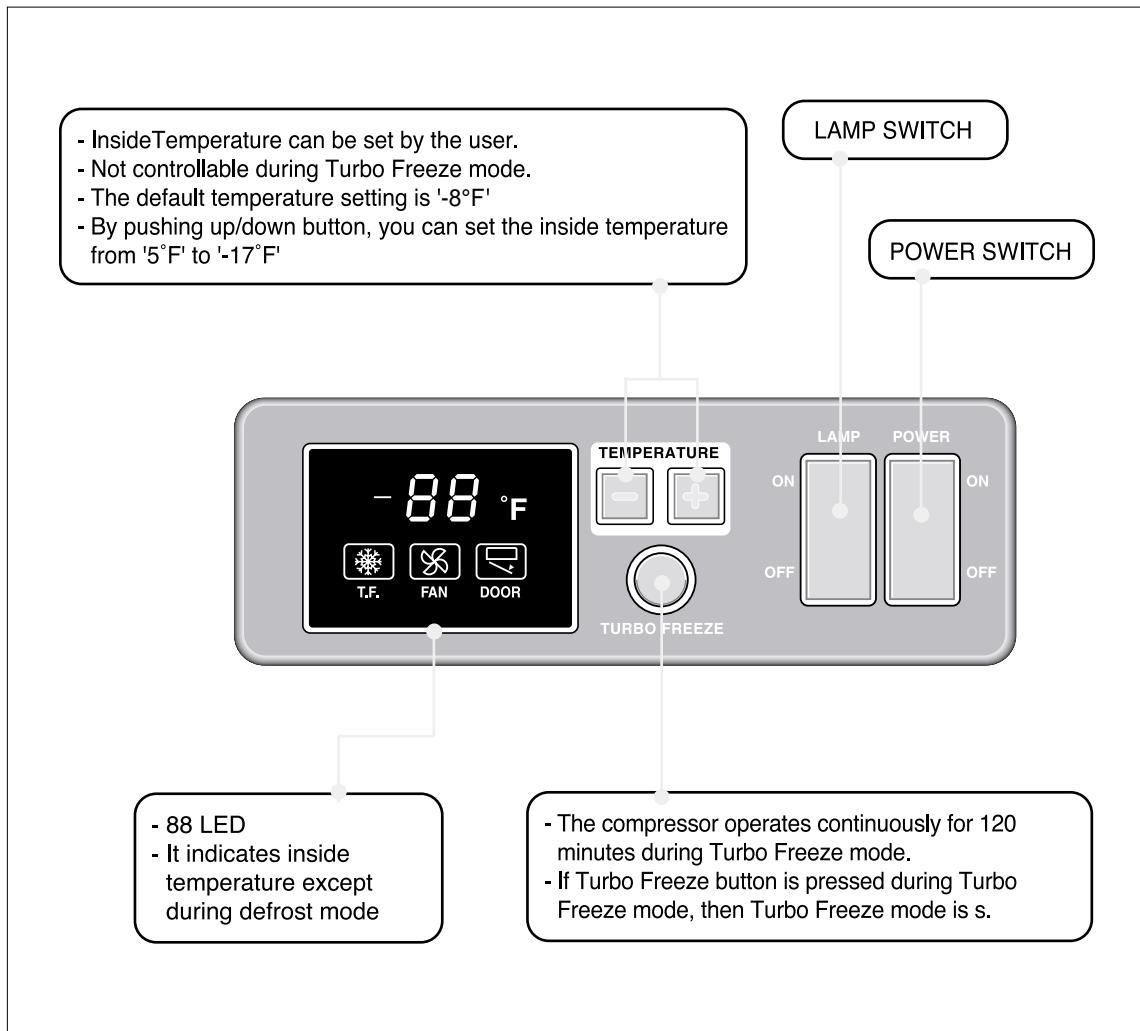


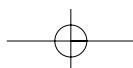


ELECTRONIC CONTROLLER INSTRUCTION

Section 5 is only for TGF-23F/49F

5-1-2. HOW TO USE THE DISPLAY PANEL (TGF-49F)

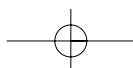


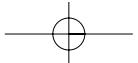


ELECTRONIC CONTROLLER INSTRUCTION

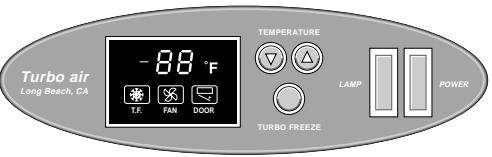
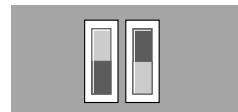
5-2. FUNCTION TABLE

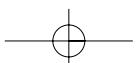
| No | Control Function | Control Objects | Contents | Remark | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|-----------------|---------------------|--|---|----------------|-----|---|---|---|---|----------------|---|---|---|---|---|-----------------|---|---|----|----|----|----------------|---|----|----|----|----|----------------|---|---|---|---|---|-----------------|----|----|----|----|----|----------------|----|----|----|----|----|----------------|----|----|----|----|----|-----------------|----|-----|-----|-----|-----|----------------|-----|-----|-----|-----|-----|----------------|----|----|----|----|-----|-----------------|-----|-----|-----|-----|-----|----------------|-----|-----|-----|--|--|----------------|-----|-----|-----|--|--|-----------------|-----|-----|-----|--|--|--|
| 1 | Initial Operation | Buzzer Fan Lamp 88 LED | <p>1. Buzzer will be ring within 2 seconds when you plugged-in and turned on the power switch.</p> <p>2. 88 LED displays inside temperature.</p> <p>3. Compressor will be run if evaporator's temperature is higher than 38.3°F(3.5°C), compressor will not run for 3 minutes when you plugged-in.</p> <p>4. The fluorescent lamp will come on, when the inside temperature has reached 23°F(-5°C).</p> <p>5. If inside temperature is lower than -50°F or higher than 50, 88 LED displays 'Lo' or 'Hi' respectively.</p> <p>6. Evap. Fan Motor will be run if D-sensor sense lower than 14°F or 10 minutes has passed from when you plugged-in.</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | Temperature Control | Compressor Evap-Fan Motor Con-Fan Motor LED | <p>1. By pushing up/down button, you can set the desired inside temperature from '5°F' to '-17°F'.</p> <p>2. 88 LED will display a setting temperature, when you push up/down button.</p> <p>3. 88 LED will indicate real inside temperature, after your setting.</p> <p>4. Buzzer rings 1 time whenever each button is pressed.</p> <p>5. Compressor automatically turns on and off by F-sensor (Except error mode)</p> <p>6. Compressor will not come on for 3 minutes After Compressor is Off, even though the F-sensor is at On point.</p> <p>7. Evap. Fan Motor runs continuously except when door is opened and during defrost mode.</p> <p>8. Evap. Fan Motor will start within 3 seconds when door is closed.</p> <p>9. Compressor On/off temperature(°F)</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td><i>Setting</i></td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td></tr> <tr> <td><i>Comp On</i></td><td>9</td><td>8</td><td>7</td><td>6</td><td>5</td></tr> <tr> <td><i>Comp Off</i></td><td>1</td><td>0</td><td>-1</td><td>-2</td><td>-3</td></tr> <tr> <td><i>Setting</i></td><td>0</td><td>-1</td><td>-2</td><td>-3</td><td>-4</td></tr> <tr> <td><i>Comp On</i></td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td></tr> <tr> <td><i>Comp Off</i></td><td>-4</td><td>-5</td><td>-6</td><td>-7</td><td>-8</td></tr> <tr> <td><i>Setting</i></td><td>-5</td><td>-6</td><td>-7</td><td>-8</td><td>-9</td></tr> <tr> <td><i>Comp On</i></td><td>-1</td><td>-2</td><td>-3</td><td>-4</td><td>-5</td></tr> <tr> <td><i>Comp Off</i></td><td>-9</td><td>-10</td><td>-11</td><td>-12</td><td>-13</td></tr> <tr> <td><i>Setting</i></td><td>-10</td><td>-11</td><td>-12</td><td>-13</td><td>-14</td></tr> <tr> <td><i>Comp On</i></td><td>-6</td><td>-7</td><td>-8</td><td>-9</td><td>-10</td></tr> <tr> <td><i>Comp Off</i></td><td>-14</td><td>-15</td><td>-16</td><td>-17</td><td>-18</td></tr> <tr> <td><i>Setting</i></td><td>-15</td><td>-16</td><td>-17</td><td></td><td></td></tr> <tr> <td><i>Comp On</i></td><td>-11</td><td>-12</td><td>-13</td><td></td><td></td></tr> <tr> <td><i>Comp Off</i></td><td>-19</td><td>-20</td><td>-21</td><td></td><td></td></tr> </table> | <i>Setting</i> | 5 | 4 | 3 | 2 | 1 | <i>Comp On</i> | 9 | 8 | 7 | 6 | 5 | <i>Comp Off</i> | 1 | 0 | -1 | -2 | -3 | <i>Setting</i> | 0 | -1 | -2 | -3 | -4 | <i>Comp On</i> | 4 | 3 | 2 | 1 | 0 | <i>Comp Off</i> | -4 | -5 | -6 | -7 | -8 | <i>Setting</i> | -5 | -6 | -7 | -8 | -9 | <i>Comp On</i> | -1 | -2 | -3 | -4 | -5 | <i>Comp Off</i> | -9 | -10 | -11 | -12 | -13 | <i>Setting</i> | -10 | -11 | -12 | -13 | -14 | <i>Comp On</i> | -6 | -7 | -8 | -9 | -10 | <i>Comp Off</i> | -14 | -15 | -16 | -17 | -18 | <i>Setting</i> | -15 | -16 | -17 | | | <i>Comp On</i> | -11 | -12 | -13 | | | <i>Comp Off</i> | -19 | -20 | -21 | | | |
| <i>Setting</i> | 5 | 4 | 3 | 2 | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <i>Comp On</i> | 9 | 8 | 7 | 6 | 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <i>Comp Off</i> | 1 | 0 | -1 | -2 | -3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <i>Setting</i> | 0 | -1 | -2 | -3 | -4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <i>Comp On</i> | 4 | 3 | 2 | 1 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <i>Comp Off</i> | -4 | -5 | -6 | -7 | -8 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <i>Setting</i> | -5 | -6 | -7 | -8 | -9 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <i>Comp On</i> | -1 | -2 | -3 | -4 | -5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <i>Comp Off</i> | -9 | -10 | -11 | -12 | -13 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <i>Setting</i> | -10 | -11 | -12 | -13 | -14 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <i>Comp On</i> | -6 | -7 | -8 | -9 | -10 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <i>Comp Off</i> | -14 | -15 | -16 | -17 | -18 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <i>Setting</i> | -15 | -16 | -17 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <i>Comp On</i> | -11 | -12 | -13 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <i>Comp Off</i> | -19 | -20 | -21 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | Turbo Freeze | Compressor Evap-Fan Motor Con-Fan Motor LED | <p>1. If the Turbo Freeze button is pressed, the Turbo freeze mode will start.</p> <p>2. If the Turbo Freeze button is pressed during the Turbo Freeze mode, the Turbo Freeze mode is cancelled.</p> <p>3. During the Turbo Freeze mode, the temperature up/down button will not be operated.</p> <p>4. T.F lamp in 88 LED is lighted during the Turbo Freeze mode.</p> <p>5. The compressor and Condenser-Fan Motor operate continuously for 120 minutes.</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

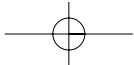




ELECTRONIC CONTROLLER INSTRUCTION

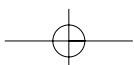
| No | Control Function | Control Objects | Contents | Remark | | | | | | | | | | | | | | | | | | | | | | | | | |
|--------------|-----------------------------------|---|--|------------------|-----------------------------------|---------------|--------------------------|------------------|--------------------------|--|-------------------------|-----|-------------------------|----|--|-----|-----|-----|----|--|-----|-----|----|-----|--|----|-----|-----|--|
| 3 | Turbo Freeze | Compressor Evap-Fan Motor Con-Fan Motor LED | <p>6. If you press the Turbo Freeze button during the defrost mode, display panel displays Turbo Freeze mode but actually The Turbo Freeze mode will start after defrost mode is completed.</p> <p>7. If defrost mode occurs during the Turbo Freeze mode, the defrost mode will start after the Turbo Freeze mode is completed</p>  | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | Determination Of Defrost | | <p>1. Defrost mode is controlled by a time interval setting. 2. The time interval setting can be set by shifting dip s/w on the PCB board. 3. The time interval setting is as follows.</p> <table style="margin-left: auto; margin-right: auto;"> <tr> <td style="text-align: right;">Dip Switch</td> <td style="text-align: center;">NO.1 NO.2 Cycle time(hours)</td> </tr> <tr> <td></td> <td style="text-align: center;">0 0 12</td> </tr> <tr> <td></td> <td style="text-align: center;">1 0 10</td> </tr> <tr> <td></td> <td style="text-align: center;">0 1 8</td> </tr> <tr> <td></td> <td style="text-align: center;">1 1 6</td> </tr> </table>  <p>4. Factory setting is to defrost every 8 hours (see the above picture.) 5. The first defrost mode will start at half of time interval setting of when unit was plugged-in.</p> | Dip Switch | NO.1 NO.2 Cycle time(hours) | | 0 0 12 | | 1 0 10 | | 0 1 8 | | 1 1 6 | | | | | | | | | | | | | | | | |
| Dip Switch | NO.1 NO.2 Cycle time(hours) | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 0 0 12 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 1 0 10 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 0 1 8 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 1 1 6 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | Defrost Function | Heater Compressor Evap-Fan Motor Con-Fan Motor | <p>1. Defrost step</p> <table style="margin-left: auto; margin-right: auto;"> <tr> <td style="text-align: right;">Comp.</td> <td style="text-align: right;">Pre-cool</td> <td style="text-align: right;">Heater</td> <td style="text-align: right;">Pause</td> <td style="text-align: right;">Fan Delay</td> </tr> <tr> <td>on</td> <td></td> <td>off</td> <td>off</td> <td>on</td> </tr> <tr> <td>on</td> <td></td> <td>off</td> <td>off</td> <td>off</td> </tr> <tr> <td>on</td> <td></td> <td>off</td> <td>off</td> <td>on</td> </tr> <tr> <td>off</td> <td></td> <td>on</td> <td>off</td> <td>off</td> </tr> </table> <p style="text-align: center;">Max time 30 min. 40 min. 3 min. 5 min.</p> <p>If D-sensor temperature is over 50°F, heater goes off. If D-sensor is in error, heater goes off automatically 40 min after activated.</p> <p>A. Pre-Cool Step a. It prevents from extreme temperature rise during defrost mode. b. Comp. Con-Fan Motor and Evap-Fan Motor run continuously during pre-cool step. c. 88 LED indicates inside temperature. d. If F-sensor is sensing lower temperature than (-22)°F(-30°C) or pre-cool step interval reach in 30 minutes, pre-cool step goes off. e. Turbo Freeze mode is only one time prior to pre-cool step.</p> <p>B. Heater defrost step a. The defrost heater is energized. b. 88 LED displays 'dF' c. The defrost heater warms the evaporator coil thereby melting all frost that accumulated during the previous refrigeration cycle. e. When D-sensor is higher than 47°F(8°C...), heater goes off.</p> | Comp. | Pre-cool | Heater | Pause | Fan Delay | on | | off | off | on | on | | off | off | off | on | | off | off | on | off | | on | off | off | |
| Comp. | Pre-cool | Heater | Pause | Fan Delay | | | | | | | | | | | | | | | | | | | | | | | | | |
| on | | off | off | on | | | | | | | | | | | | | | | | | | | | | | | | | |
| on | | off | off | off | | | | | | | | | | | | | | | | | | | | | | | | | |
| on | | off | off | on | | | | | | | | | | | | | | | | | | | | | | | | | |
| off | | on | off | off | | | | | | | | | | | | | | | | | | | | | | | | | |

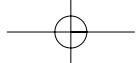




ELECTRONIC CONTROLLER INSTRUCTION

| No | Control Function | Control Objects | Contents | Remark |
|----|--------------------------------|---|--|--------|
| 5 | Defrost Function | Heater Compressor Evap-Fan Motor Con-Fan Motor | <p>f. If Defrost Heater's on time exceeds 40 minutes for any reason, a back-up defrost termination switch is also provided.</p> <p>g. If D-sensor's temperature does not reach 47°F(8°C) in 40 minutes, error code will be recorded on a MICOM.</p>  <p>C. Pause step a. Time = 3 min. b. 88 LED displays 'dF'</p> <p>D. Fan delay step a. Max. Time = 5 min b. Only Comp. is On. c. If D-sensor temperature goes down under 14°F in 5 minutes, Evap.-Fan Motor turns on immediately.</p> | |
| 6 | Manual Defrost | Compressor Evap-Fan Motor Con-Fan Motor Heater | 1. Press the Turbo Freeze button 5 seconds, While pressing both up/down button at the same time. 2. Manual defrost mode. a) The pre-cool step is omitted. b) It starts from heater defrost step. c) The next procedure is the same as that of the defrost mode. | |
| 7 | Comp Restart Prevent | Compressor Con-Fan Motor | 1. Compressor will not start for 3 minutes after compressor is off, even though the F-sensor is at on point. | |
| 8 | Power Failure Back-Up Function | Compressor Evap-Fan Motor Con-Fan Motor | 1. Compressor will not start for 3 minutes after power failure. 2. Evap.-Fan Motor is on. | |
| 9 | Door opening Alarm function | Buzzer LED | 1. If door is opened, light on display board for fan turns off and door open indicating lamp turns on. 2. If door is opened more than 30 seconds, display will beep 3 times. 3. If door is opened more than 60 seconds, display will beep 5 times. 4. If door is opened more than 5 minutes, display will beep continuously. | |
| 10 | Buzzer Function | Buzzer | 1. Beep sound rings 1 time after initial power on. 2. Beep sound rings whenever each button is pressed. 3. Beep sound rings if door is opened a certain time period. (See door opening alarm function) | |
| 11 | Error Display | LED | 1. Press up button 5 times while pressing both down button and Turbo Freeze button at same. Above procedure switches normal display to error display mode. 2. If there was no error occurred, there will be no change on the 88 LED. If there was error occurred, 88 LED will display the error code. 3. Next error code will be displayed by pressing down button. 4. 10 seconds after the last button pressed, error display mode will be switched to normal display mode. | |





ELECTRONIC CONTROLLER INSTRUCTION

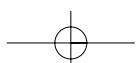
| No | Control Function | Control Objects | Contents | Remark |
|----|------------------|---|--|--------|
| 12 | Fuzzy Defrost | Heater Compressor Evap-Fan Motor Con-Fan Motor | The Defrost step will be started at following conditions. 1. The compressor has run for 30 minutes. 2. There is no opening the door for 30 minutes. 3. The temperature of D-sensor is lower than 5°F. 4. The temperature of F-sensor is higher than D-sensor's temperature by 53.6°F for 10 minutes. | |

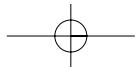
5-3. Self - Diagnosis table

| Code | Content | Perception Method | Freezer operation state |
|------|--------------------------|--|---|
| F1 | F-sensor Malfunction | - Sensor shorted - Sensor disconnected | - The compressor runs for 30 minutes and rests for 5 minutes. - Above action will repeat, until it is repaired. |
| D1 | D-sensor Malfunction | - Sensor shorted - Sensor disconnected | - Defrost heater will attempt to defrost. - If F-sensor temp. is higher than 28.4°F then heater goes off. - Heater turns on for 20 minutes, if F-sensor is in error mode too. |
| C1 | Cycle, Comp. Malfunction | - When the temperature of the D-sensor is over 32°F although the compressor has been running for 30 minutes. | - Normal operation. (Compressor is automatically turned on and off by F-sensor.) |
| F3 | Defrost Malfunction | When the D-sensor temperature doesn't reach 47°F within 40 minutes. | - Defrost heater will be come on for 40 minutes every time setted. - If the D-sensor's temp. reach 47°F within 40 minutes, D-heater will be turned off immediately. |

5-4. Sensor Description

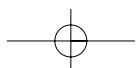
| Sensor | Operation | Description | Remarks |
|----------|--|-------------------------|---------|
| F-sensor | -Thermistor(Electrical resistance varies with temperature changing) -Act like thermostat. Detects air temperature. | - Wire color is orange. | |
| D-sensor | -Thermistor(Electrical resistance varies with temperature changing) -Act like thermostat. Detects Evap. coil's temperature. | - Wire color is blue. | |

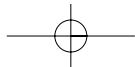




6. PARTS LIST

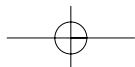
| Part Name | Part Number | Description | Model | | | |
|------------------------------|-------------|------------------------------|-------|-----|-----|----|
| | | | 49F | 23F | 13F | 9F |
| Casters | | | | | | |
| Caster | 30265L0400 | TP5040-22-HDP | 2 | 2 | | |
| Caster with Brake | 30265L0300 | TP5040-22-HDP-TLB | 2 | 2 | | |
| Caster | 30265H0100 | 1/2" Stem (TP3625-21-HR) | | | 2 | 2 |
| Caster | 30265H0200 | 1/2" Stem (TP3625-21-HR-TLB) | | | 2 | 2 |
| Compressor | | | | | | |
| Compressor | 30200R1900 | CAJ2464Z(FRANCE TECUMSEH) | 1 | | | |
| Compressor | 30200R0100 | CAJ2432Z(FRANCE TECUMSEH) | | 1 | | |
| Compressor | 30200N4400 | AEZ2415Z(TECUMSEH FRANCE) | | | 1 | |
| Compressor | 3952127G30 | HBL27YE-1(DAEWOO) | | | | 1 |
| PowerRelay(Comp.Relay) | 30281H0330 | UZ2ABT 110(YUYU) | 1 | 1 | | |
| Main Power Cord | 30213Q0201 | 125V,220V /20A | 1 | | | |
| Main Power Cord | 30213A1010 | 125V/15A | | 1 | | |
| Compressor Relay | 3817906900 | PTC 068 | | | | 1 |
| Compressor Relay Assembly | 30200N4501 | Including Harnes | | | | 1 |
| Compressor Overload | 3817908600 | 4TM-783RHB (TEXASINS.) | | | | 1 |
| Compressor Run Capacitor | 400EL15130 | 230V 10uF | | | | 1 |
| Compressor Start Capacitor | 401RD35050 | 220V 100uF | | | | 1 |
| Compressor Capacitor Fixture | 3022006000 | SPG | | | | 1 |
| Condenser | | | | | | |
| Condenser Coil | 30200R3300 | TGF-49F | 1 | | | |
| Condenser Coil | 30200R0200 | TGF-23F | | 1 | | |
| Condenser Coil | 30200N5300 | Refer Parts Diagram | | | 1 | |
| Condenser Coil | 30200N5201 | Refer Parts Diagram | | | | 1 |
| Condenser Fan Motor | 3963322020 | IS-4420DWSQ1 | 2 | | | |
| Condenser Fan Motor | 3963220410 | IS-4420DWSG1 | | 1 | | |
| Condenser Fan Motor | 3963326010 | IS-3225DWSK1 | | | 1 | 1 |
| Condenser Fan Moter Blade | 30218B0100 | AL, ø225, No of BLADE: 4 | 2 | | | |
| Condenser Fan Moter Blade | 30218F0100 | Zytel, ø150, No of BLADE: 6 | | | 1 | 1 |
| Condenser Fan Moter Blade | 30218A0300 | AL, ø250, No of BLADE: 5 | | 1 | | |
| Compressor Dryer | 30268Q0300 | C-052-S | 1 | 1 | | |
| Compressor Dryer | 30268N0100 | 15g, Refer Parts Diagram | | | 1 | |
| Compressor Dryer | 3016800103 | 10g, Refer Parts Diagram | | | | 1 |
| Rear Grill | 30214R7600 | SWRM-B | 1 | | | |
| Rear Grill | 30214Q5000 | SWRM-B | | 1 | | |
| Capillary Tube | 30244R2500 | L4425xø2.0(ID) | 1 | | | |
| Capillary Tube | 30244R2000 | L2700xø1.6(ID) | | 1 | | |
| Power Cord | 30213A1000 | KKP-30B | | 1 | 1 | 1 |
| Power Cord Clamp | 30212A0600 | SPG | | 1 | 1 | 1 |
| Condenser Coil Shroud | 30214N2003 | SWRM-B | | | 1 | |
| Condenser Coil Shroud | 30214N1903 | SWRM-B | | | | 1 |

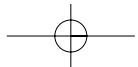




PARTS LIST

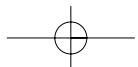
| Part Name | Part Number | Description | Model | | | |
|---------------------------------------|-------------|---------------------|-------|-----|-----|----|
| | | | 49F | 23F | 13F | 9F |
| Evaporator | | | | | | |
| Evaporator Coil | 30270R0200 | TGF-49F | 1 | | | |
| Evaporator Coil | 30270R0100 | TGF-23F | | 1 | | |
| Evaporator Sensor (D-senser+F-Senser) | 30227Q1200 | TH225J37/TH310H34 | 1 | | | |
| Evaporator Sensor (D-senser+F-Senser) | 30227L1101 | TH225J/TH310H | | 1 | | |
| Evaporator Thermal Fuse | 30272L0400 | PST-3(80/10) | | 1 | | |
| Evaporator Drain Pan Heater | 30228L1500 | 90W | 1 | | | |
| Evaporator Drain Pan Heater | 30228L1400 | 90W | | 1 | | |
| Evaporator Defrost Heater | 30228L0700 | 600W | 1 | | | |
| Evaportaor Defrost Heater | 30228L0802 | 445W | | 1 | | |
| Drain Hose Heater | 30228L1310 | 10W, L=700mm | 1 | | | |
| Drain Hose Heater | 30228L1300 | 10W, L=700mm | | 1 | | |
| Drain Pan Insulator | 30233L0200 | E-PS | 1 | | | |
| Drain Pan Insulator | 30233L0100 | E-PS | 2 | 1 | | |
| Evaporator Fan Motor Guard | 30214K0100 | ABS | 2 | 1 | | |
| Evaporator Fan Motor Blade | 30218F0200 | AL,ø175 | 2 | 1 | | |
| Evaporator Fan Motor | 3963328120 | IS-4420DWSN-2A | 2 | 1 | | |
| Duct(A) | 30269R0400 | SPG, WH | 1 | | | |
| Duct(B) | 30269R0300 | SPG, WH | 1 | | | |
| Duct(A) | 30269R0100 | EGI, Painting | | 1 | | |
| Duct(B) | 30269R0200 | EGI, Painting | | 1 | | |
| Evaporator URT Foam Assembly | 30270H0100 | TGF-13F | | | 1 | |
| Evaporator URT Foam Assembly | 4034L05103 | TGF-9F | | | | 1 |
| Evaporator*Top | 3020000702 | ROLLBOND(AL) | | | 1 | |
| Evaporator*Top | 3020000305 | ROLLBOND(AL) | | | | 1 |
| Insulation Cover | 30214N0800 | PVC-H | | | 1 | |
| Insulation Cover | 30214N0700 | PVC-H | | | | 1 |
| Insulation Cover Heater | 30228N0800 | 4W, L:1420 | | | 1 | |
| Insulation Cover Heater | 30228N0700 | 4W, L:994 | | | | 1 |
| Door | | | | | | |
| Door Assembly(Left) | 30200R3600 | Heated Glass, Swing | 1 | | | |
| Door Assembly(Right) | 30200R3500 | Heated Glass, Swing | 1 | | | |
| Door Assembly | 30200R1500 | Heated Glass, Swing | | 1 | | |
| Door Assembly | 30200N4600 | Glass, Slide | | | 2 | |
| Door Assembly | 30200N4300 | Glass, Slide | | | | 1 |
| Door Glass | 30255N0300 | T4,684x323 | | | 1 | |
| Front Glass | 3025500100 | T12,1492x110 | | | 1 | |
| Door Glass | 30255N0100 | T4,1001x323 | | | | 1 |
| Front Glass | 30255N0200 | T4,1067x110 | | | | 1 |
| Door Glass | 30255R0100 | HeatedGlass | | 1 | | |
| Door Gasket | 30223R0100 | PVC-S,1350x650 | | | 1 | |
| Lamp Socket(A) | 30230R1100 | without spring | 1 | 1 | | |
| Lamp Socket(B) | 30230R1000 | with spring | 1 | 1 | | |
| Lamp Shield Cap | 30214R0100 | ABS | | 1 | | |
| Lamp Shield | 30242R1100 | PC | | 1 | | |

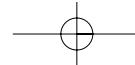




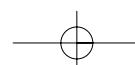
PARTS LIST

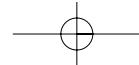
| Part Name | Part Number | Description | Model | | | |
|--------------------------|-------------|--------------------------|-------|-----|-----|----|
| | | | 49F | 23F | 13F | 9F |
| Lamp Socket Bracket | 30206R1000 | SPG, Painting | | 1 | | |
| Lamp Shield Fixture | 30220R1100 | EGL, Painting | | 1 | | |
| Door Handle | 30226A0101 | Slide, ABS Plastic, Gray | | | 1 | 1 |
| Door Rail (Middle) | 30287N0201 | PVC-H | | | 1 | |
| SignPanel | | | | | | |
| Ballast | 30200R4300 | B232I120RH-A | 1 | | | |
| Ballast | 30285R1200 | 17Wattx1, R-1P17-TP | | 1 | | |
| Ballast | 30200A0120 | 32Wattx1, R-1P32-TP | | | 1 | |
| Ballast | 30200A0131 | 25Wattx1, R-1P825-TP | | | | 1 |
| Lamp | 30236R1100 | F48T12/CW/1500 | 1 | | | |
| Lamp | 30236D0511 | F32T8 TL860 | 1 | | | |
| Lamp | 30236H0500 | 17Watt, F17T8/TL950, 12" | | 1 | | |
| Lamp | 30200D2800 | 32Watt, F32T8/TL850, 48" | | | 1 | |
| Lamp | 30236A0500 | 25Watt, F25T8/TL950, 36" | | | | 1 |
| Sign Panel | 30214N170P | HIPS | | | 1 | |
| Sign Panel | 302141020P | HIPS | | | | 1 |
| Lamp Holder | 3183005000 | SK-10, OD28 | | | 1 | 1 |
| Lamp Switch | 30281A0600 | 125V, 6A | | | 1 | 1 |
| Lamp Socket | 30279N0100 | Including Harnes | | | 1 | |
| Lamp Socket | 3027900113 | Including Harnes | | | | 1 |
| Decoration Cover (Left) | 30214N0100 | ABS Plastic, Gray | | | 1 | 1 |
| Decoration Cover (Right) | 30214N0200 | ABS Plasic, Gray | | | 1 | 1 |
| Sign Panel | 30242R1000 | PC | | 1 | | |
| Lamp Holder | 3183005000 | JS 103 | 2 | 1 | | |
| Door Switch | 30281R0100 | E3101CA | 2 | 1 | | |
| Lamp Socket | 30227R2400 | Including Harnes | 1 | | | |
| Lamp Socket | 30227R1000 | Including Harnes | | | 1 | |
| Sign Frame*Top | 30222R0200 | AL,Painting | | | 1 | |
| Sign Frame*Bottom | 30222R0100 | AL,Painting | | | 1 | |
| Sign Frame*Right | 30222A2500 | ABS | | | 1 | |
| Sign Frame*Left | 30222R2400 | ABS | | | 1 | |
| Sign Panel | 30274R0100 | HIPS | 1 | | | |
| Sign Frame*Top | 30222R2001 | AL White COATING | 1 | | | |
| Sign Frame*Bottom | 30222R2101 | AL White COATING | 1 | | | |
| Sign Frame*Right | 30222R2300 | ABS White | 1 | | | |
| Sign Frame*Left | 30220R2200 | ABS White | 1 | | | |
| BottomGrill | | | | | | |
| Bottom Grill | 30224R0100 | ABS | | 1 | | |
| Bottom Grill | 30200R3400 | Coated steel | 1 | | | |
| Display Panel Cover | 30217R0100 | PC | | 1 | | |
| Main PCB | 30243R0100 | 1GF1151 | | | 1 | |
| Main PCB | 30243R0200 | 2GF1151 | | 1 | | |
| DisplayPCB | 30242R0100 | TGF-23F | | | 1 | |
| Power Switch | 30281R0200 | ROCKER TYPE, RED | | | 1 | |
| Lamp Switch | 30281R0300 | ROCKER TYPE, GREEN | | | 1 | |



**PARTS LIST**

| Part Name | Part Number | Description | Model | | | |
|---------------------------|-------------|-----------------------|-------|-----|-----|----|
| | | | 49F | 23F | 13F | 9F |
| Transformer | 30284L0100 | DWS-115U | 1 | 1 | | |
| Ballast | 30200R3102 | 949-LH-TC-P(MAGNETEK) | 1 | 1 | | |
| Shelf | | | | | | |
| ShelfStandard | 30220L1001 | SUS304-2B | | 4 | | |
| Shelf *L | 30250R0600 | SWRM-B | 4 | | | |
| Shelf *R | 30250R0500 | SWRM-B | 4 | | | |
| Shelf | 30278R0100 | Wire, White | | 4 | | |
| ShelfClip | 30220L0900 | PA-6 | | 16 | | |
| BackGuard (AirBaffleBack) | 30250R0200 | Wire, White | | 2 | | |
| Thermostat | | | | | | |
| Themperature Control | 30283N0100 | GNF-107DC(SHINHAN) | | | 1 | 1 |





7. REPLACEMENT OF MAIN COMPONENTS

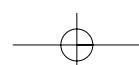
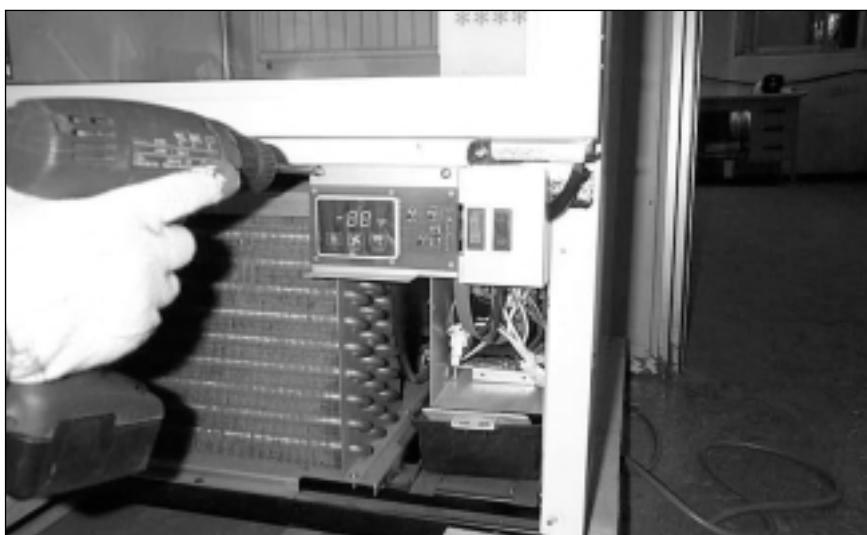
7-1. BOTTOM GRILLE PARTS(TGF-23F)

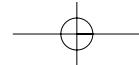
- MAIN PCB, TRANSFORMER, POWER RELAY
- DISPLAY P.C.B.
- LAMP SWITCH, POWER SWITCH

A. Remove Bottom Grille by unscrewing the four screws.



B. Remove the Bracket of Display P.C.B.





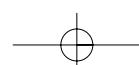
REPLACEMENT OF MAIN COMPONENTS

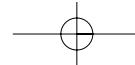
C. Disconnect Connectors and receptacles.

- Replace the Power Switch, Lamp Switch or Display P.C.B.



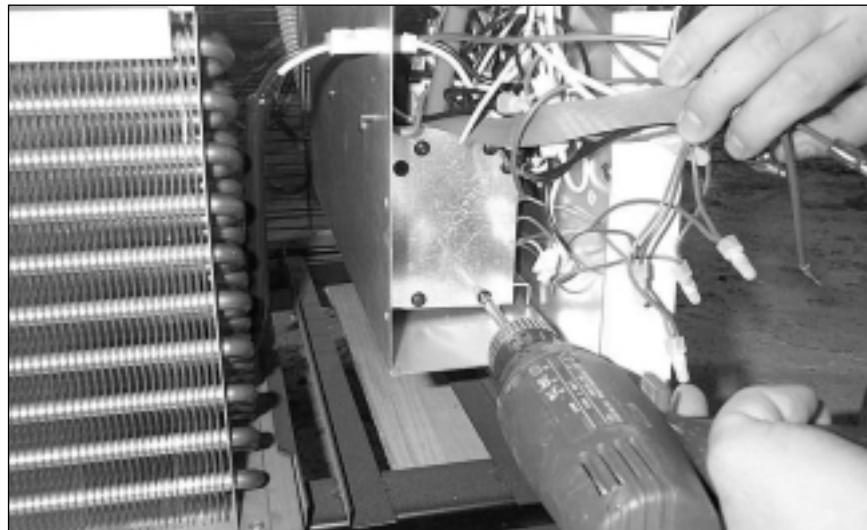
D. Remove the electrical box (Switch Box) cover.





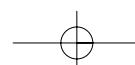
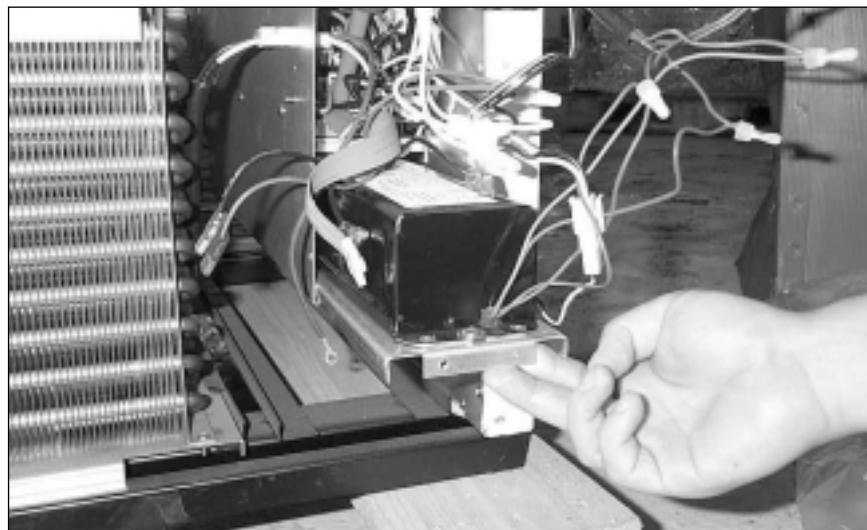
REPLACEMENT OF MAIN COMPONENTS

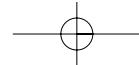
E. Remove the Fixture.



F. Replace the Ballast. (for inner Cabinet Lamp. 110W)

1. Pull out the Ballast Base.
2. Replace the Ballast.

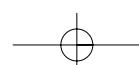
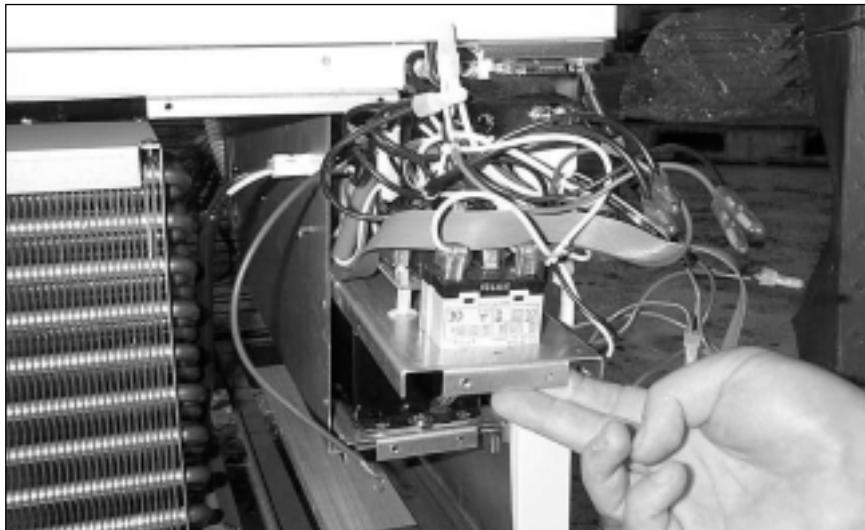


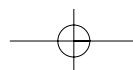


REPLACEMENT OF MAIN COMPONENTS

G. Replace the Main P.C.B. Transformer and Power Relay.

1. Pull out the Base.
2. Replace the parts.

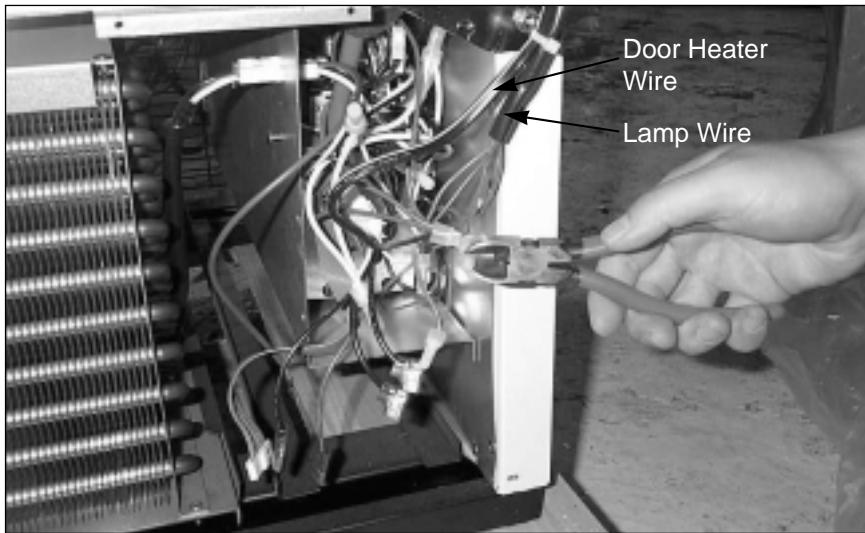




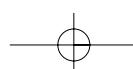
REPLACEMENT OF MAIN COMPONENTS

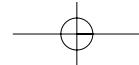
7-2. REPLACING DOOR (TGF-23F)

- A. Disassemble bottom grille as described section 7-1, A, B, C, D.
- B. Disconnect the door heater wire and lamp wire.



- C. Remove the Sign Frame (Left, Right) by unscrewing the four screws of each side.





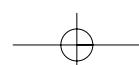
REPLACEMENT OF MAIN COMPONENTS

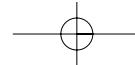
D. Pull out sign panel to the Right Side.



F. Remove the sign panel frame *Bottom.

- Replace the Ballast (Sign Panel)





REPLACEMENT OF MAIN COMPONENTS

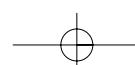
E. Remove the harness of door switch.

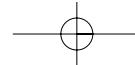
- Replace door Switch.



G. Remove the door hinge top.

H. Lift the door and pull out the door wires.





REPLACEMENT OF MAIN COMPONENTS

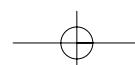
7-1. TOP ADVERTISING PANEL (TGF-49F)

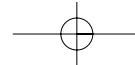
- MAIN PCB, TRANSFORMER
- LAMP SWITCH, POWER SWITCH
- DISPLAY P.C.B

A. Remove the Sign Frame by unscrewing two screws of left side.



B. Pull out the sign panel from left side.





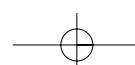
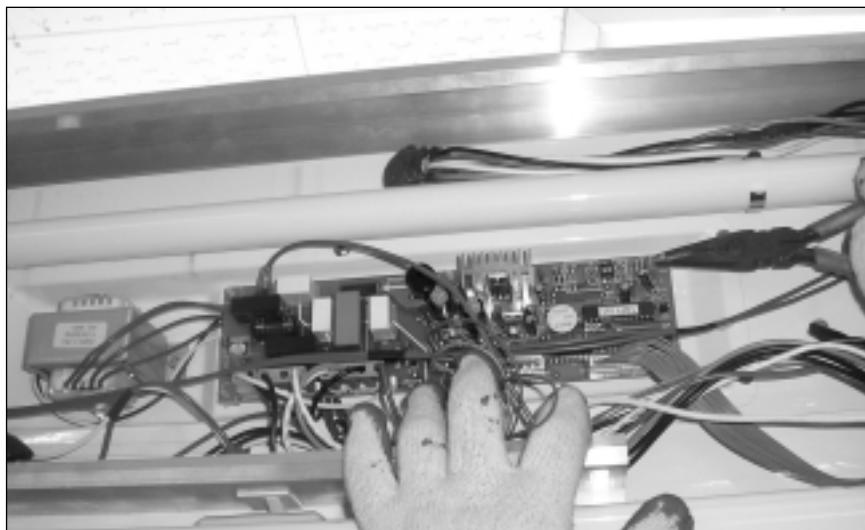
REPLACEMENT OF MAIN COMPONENTS

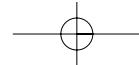
C. Replace the TRANSFORMER.



D. Grip the fixture with long nose and pull out the Main P.C.B.

- Replace the Main P.C.B.

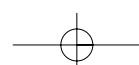


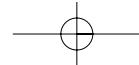


REPLACEMENT OF MAIN COMPONENTS

E. Disconnect Connectors and receptacles.

- Replace the Lamp switch and the Power switch
- Unscrew four screws and replace the Display PCB





REPLACEMENT OF MAIN COMPONENTS

7-2. BOTTOM GRILLE PARTS (TGF-49F)

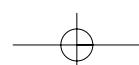
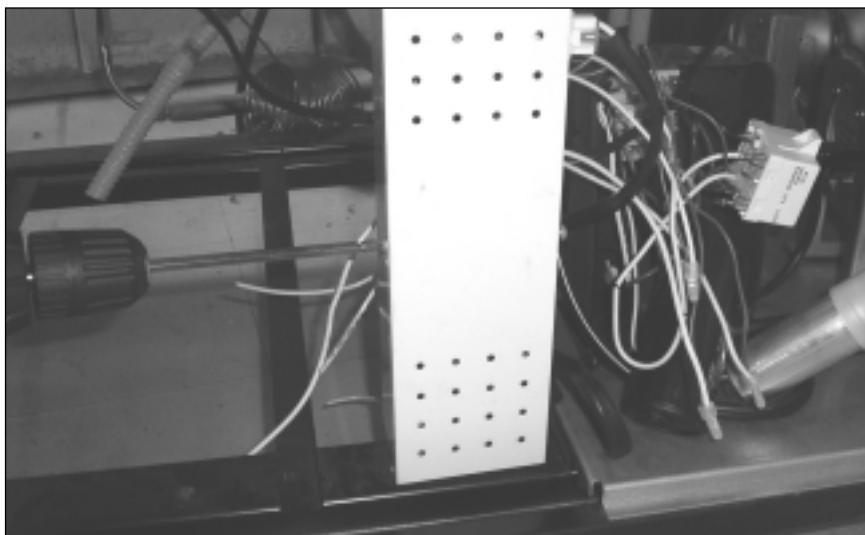
- POWER RELAY
- BALLAST(For Inner Cabinet Lamp)

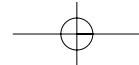
A. Remove the Bottom Grill by unscrewing four screws.



B. Unscrew the cover plate each side.

- Remove the junction cover





REPLACEMENT OF MAIN COMPONENTS

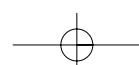
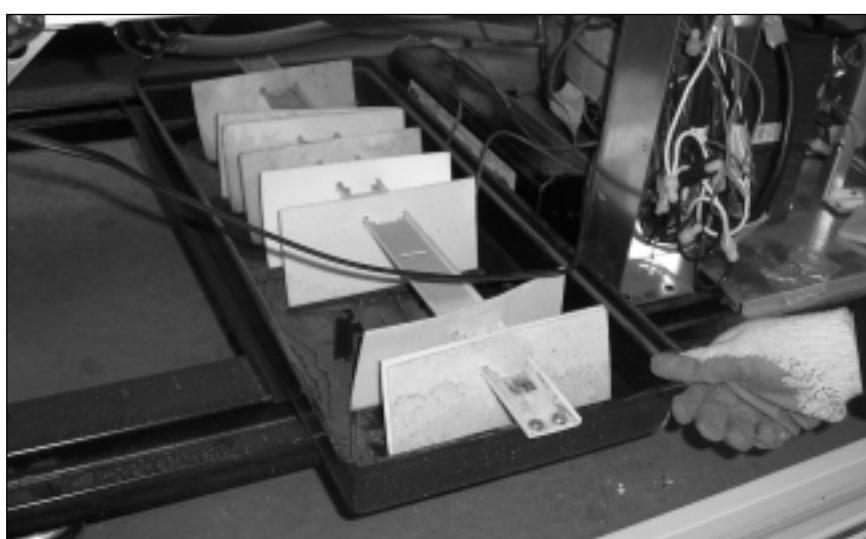
C. Disconnect receptacles and unscrew two screws.

- Replace the Power relay



D. Remove the Drain case.

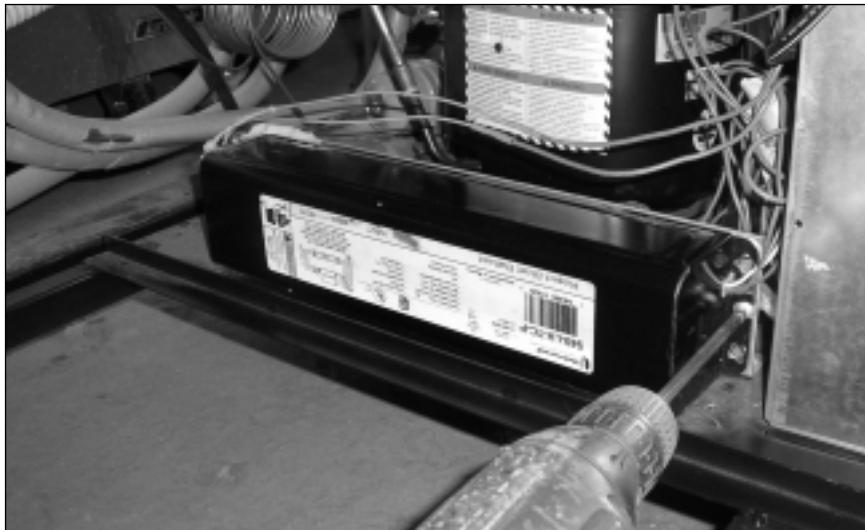
- Pull out the Drain case.

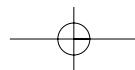


REPLACEMENT OF MAIN COMPONENTS

E. Unscrew two screws on the Ballast bracket. (for Inner Cabinet Lamp. 110W)

- Replace the Ballast

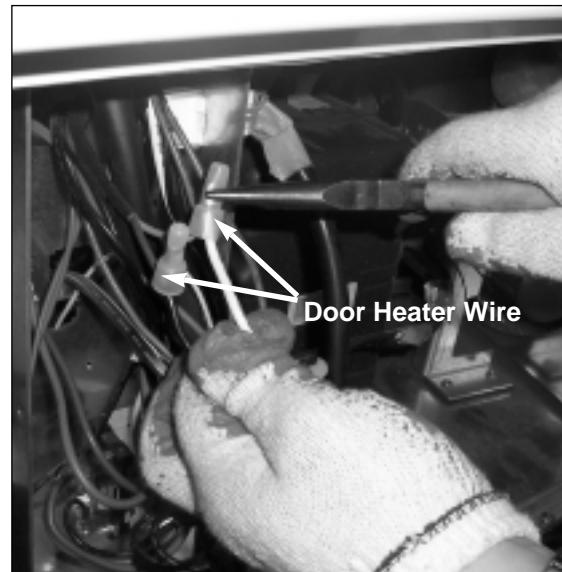




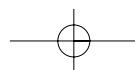
REPLACEMENT OF MAIN COMPONENTS

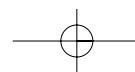
7-3. REPLACEING DOOR (TGF-49F)

- A. Disassemble bottom grill as described section 7-2, A.
- B. Disconnect Left(right) Door heater wires.



- C. Disconnect Left (Right) Door switch wires.

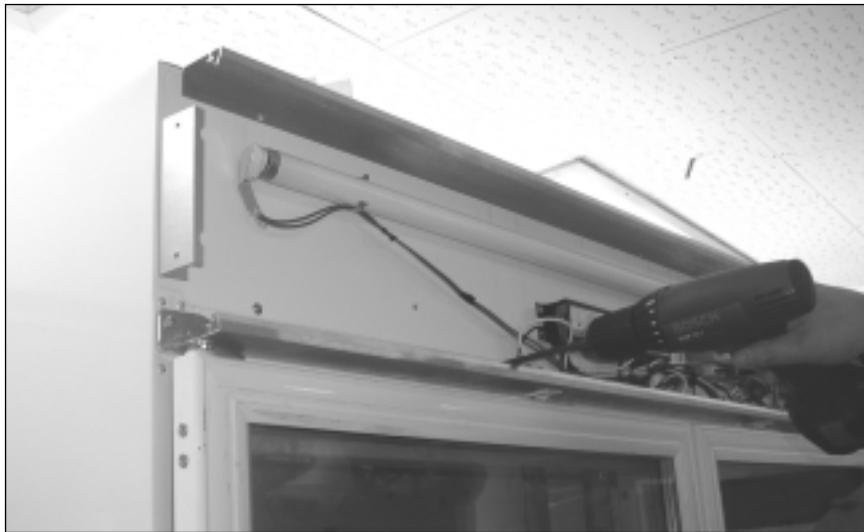




REPLACEMENT OF MAIN COMPONENTS

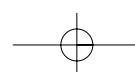
D. Unscrew the Sign Frame. (Bottom)

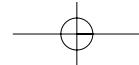
- Remove Sign Frame (Bottom)



E. Remove the door hinge(top).

- Lift the door and pull out the door wire.





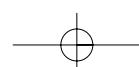
REPLACEMENT OF MAIN COMPONENTS

7-4. REPLACING Inner Cabinet Lamp (TGF-49F)

A. Unscrew the top shelf bracket and Pull out it.



B. Unscrew a bottom screw and separate the shelf bracket.



REPLACEMENT OF MAIN COMPONENTS

C. Unscrew the lamp top cover and separate lamp cover.



D. Lift the fluorescent lamp and pull out it.

-Replace the fluorescent light

